



PLATE Q

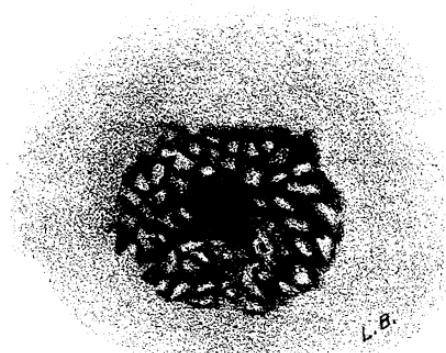


FIG. LVII. A CLOACA SURROUNDED BY EXUBERANT GRANULATION.

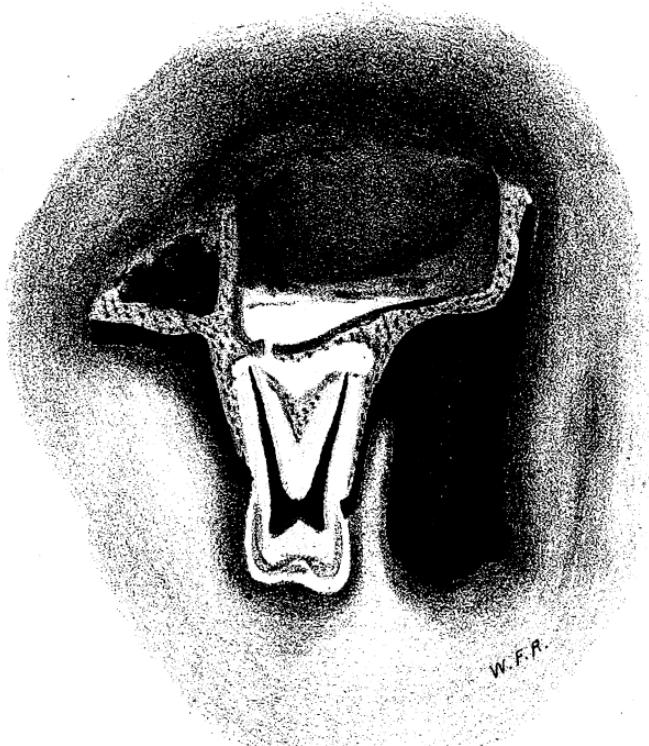


FIG. LVIII. ABSCESS OF ANTRUM.

PLATE R.



FIG. LIX. ABSCESS SAC LAID OPEN.

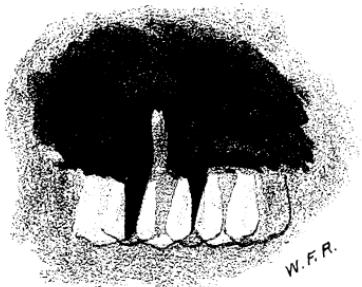


FIG. LX. ULCERATIVE PERICEMENTITIS.

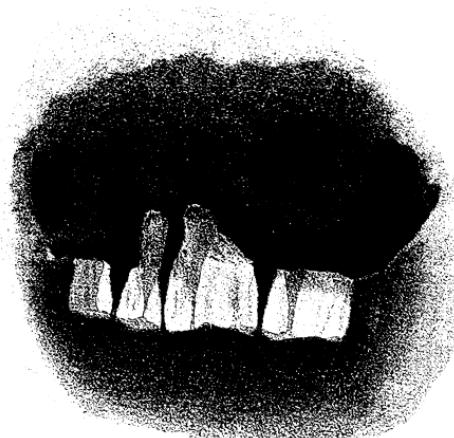


FIG. LXI. ATROPHIC GINGIVITIS.

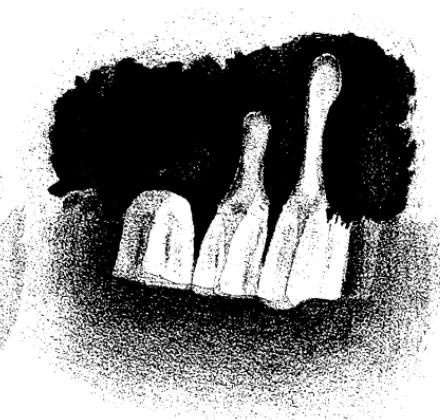


FIG. LXII. ONE EFFECT OF PHAGEDENIC PERICEMENTITIS.





PLATE S.

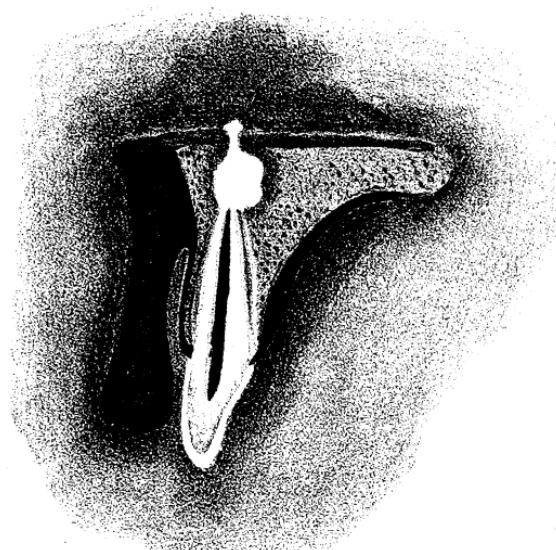


FIG. LXIII. ABSCESS SUPERIOR CENTRAL OPENING NASAL FLOOR.

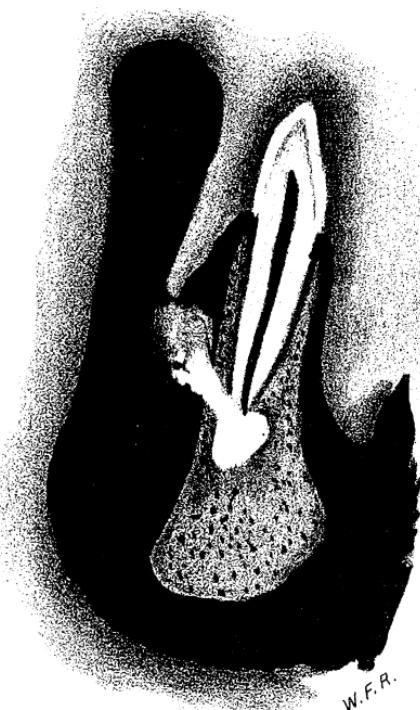


FIG. LXIV. ALVEOLAR ABSCESS INFERIOR CUSPID.

PLATE T.



FIG. LXV. ABSCESS OF INFERIOR INCISORS ORDINARY PLACE OF DISCHARGE

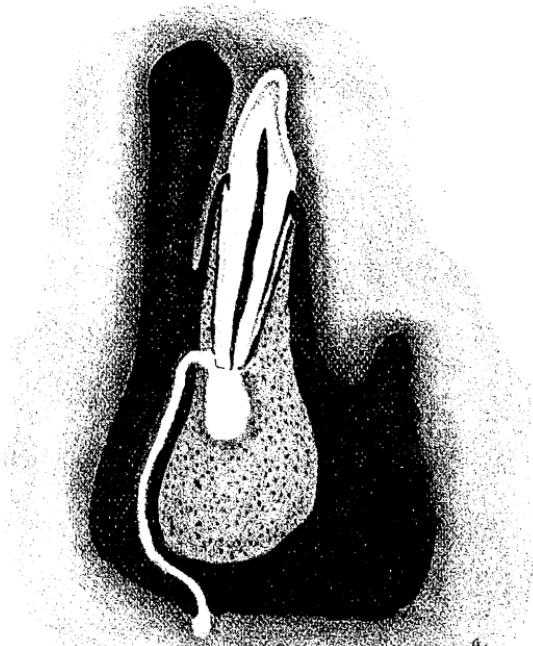


FIG. LXVI. ALVEOLAR ABSCESS DISCHARGING UNDER CHIN.



# ITEMS OF INTEREST.

VOL. XV.

DECEMBER, 1893.

NO. 12.

## ORIGINAL COMMUNICATIONS.

### ORAL DISEASES:

#### SURGICAL AND NON-SURGICAL.

*By W. F. Rehfuss, D.D.S., and L. Brinkmann, M.D.*

[CONCLUDED FROM PAGE 589.]

#### PERICEMENTITIS—GENERAL CONSIDERATIONS.

We are dealing with the nutritive changes of a fibro vascular membrane, plentifully supplied with nerve fibres. A membrane having a twofold source of blood-vessels, and whose nerves have likewise a double origin. This membrane is inclosed between unyielding walls and forming the circulatory apparatus for the retentive tissue of the particular tooth.

This tissue varies in intensity. One possesses a pericementum; it may be of a maxomatic type, or only a thin, dense film of fibrous connective tissue.

In one case is formed an articulation variably movable; the other having a degree of immobility, sufficient to be characterized as an ankylosis. It will thus be readily seen how intensity and effect are so different in the forms of this disorder. In point of effect pericementitis may be divided into two classes, the constructive and destructive. Another division, according to place of origin, into those beginning at the gingival margin, and another class, having the primary inflammatory action arising in the apical space. Between these should be placed a variety whose incipiency is on the longitudinal surface of teeth, between the two points.

Classified as to cause, Dr. Flagg specifies seventeen, each distinct and possible. These, however, to use another of his classifications, may be placed under three heads: Mechanical, chemical, vital.

Under mechanical causes we may place wedging, malocclusion, salivary calculus and tartar, and manipulation.

Under the vital: irritation from noxious products, continuity and the specific causes.

Third, the chemical: including all cases produced by the use of irritating drugs, caustics, etc.

Dr. Flagg's division of the inflammation into five grades, ranking as to severity, is highly applicable and suggestive, demonstrating, as it does, causes and reasons why intensity varies with the type of individual. This necessarily opens a wide field of investigation in the relations subsisting between temperament and tissue. Again, between tissue and function. Space, unfortunately, does not permit a discussion of the question here.

Following Dr. Black's classification we have seven types of causes:

1st. Traumatic pericementitis; that arising from violence, mechanical injury, wedging, concussions; either one violent or repeated, as in thread biting; continuous, as from too severe and protracted malleting, malarticulation, etc.

2d. Absorption of the roots of permanent teeth, and after transplantation, replantation, implantation.

3d. Apical pericementitis, almost invariably resulting from death of the dental pulp.

4th. Alveolar abscess, following the above.

5th. Gingivitis and marginal pericementitis, from constitutional causes, these including the action of drugs having a selective action.

6th. Calcic inflammation, from salivary or serum calculus.

7th. Phagedenic pericementitis, a type in itself.

Generalizing on the subject, treating it analytically, would be but plagiarizing from Dr. Garretson's work on Oral Surgery. The broad aspect of the matter has been handled by him in such manner as leaves nothing to be done. For further and exhaustive distinctions we can but refer the reader to his work.

With the constructive type of pericementitis we have little to do, the measures for its management are so rarely needed that it is best to discuss that form first. This will include hypercementosis, hyperostosis and reparative action following inflammations of the tissue, and after implantation, replantation, transplantation.

First the hypercementosis. This arises from a degree of irritation which does not exceed a constant stimulation. The increased blood supply means increased pabulum, and as a consequence, tissue change, proceeding either to a higher organization of tissue or its hypertrophy. As a rule, this assumes the form of

a thickening of the cementum, usually at the apex, though it may be on any part of a root's surface. Anything productive of continuous stimulation of the pericementum may give rise to this hypertrophy. Protruding root fillings, excess of filling material producing maloclusion, maloclusion itself, and non-occlusion are causes. Not uncommonly we find exostosis on teeth which have been the subject of pulp calcification.

*Treatment.*—If possible, remove source of irritation. Unless the tooth becomes painful, let it alone. If unbearable, extract carefully. Sorbafacients are useless.

Hyperostosis around the teeth becomes evident through these teeth shifting their position while still firmly fixed in their alveoli. At times this is a conservative action. Sometimes teeth move from non-occlusion, or maloclusion, into positions where they may be useful. After orthodontic appliances have been worn this should follow.

In these cases it is the bone, rather the osteoblasts, which respond to the irritation, functioning they produce reparative tissue of a proper type. Usually the action is conservative here, and no more. Exostoses, as tumors, or hypertrophies about the teeth, will have source in any continued mild irritation. The growths may assume any form. Why such action should be is frequently inexplicable. Excluding here those instances of exostosis where teeth are displaced from phagedenic pericementitis. There are cases where the action takes place at the symphysis menti, this displacing separating the inferior central incisors.

In the superior maxilla, analogous cases are those marking a thickening of points of union between the premaxillary and the maxillary bones proper. This instance of a checked action arising anew, is not unique. It is constructive here, but no more strange than its destructive congener, absorption of the roots of permanent teeth.

The other variety of the constructive pericementitis having reparative action. This follows loss of tissue from ulcerative action, is that type which insures success in operations of implantation, replantation, transplantation. The thoroughness of the process is gauged by the amount of restoration. As in other scar tissue, it is not always complete, and again there may be a superfluity.

Pericementum, once thoroughly detached from its source of nutrition, it is always questionable if it ever becomes revitalized, and continues as a distinct and functioning membrane. Observations thus far would seem to indicate the union after implanting

operations as an ankylosis. After partial detachment a return to normality is common; witness this in cases of alveolar abscess and localized pericementitis.

After the suppurative action has ceased, where the source of irritation has been removed, the indifferent, the embryonic cells, lining the diseased area, go on to organization and the restoration of lost tissue may be complete or almost. How far the local circulation is restored is doubtful. The many vessels occupying the apical space have been necessarily destroyed in the formation of the abscess.

#### ABSORPTION OF THE ROOTS OF PERMANENT TEETH.

This would be better termed a resorption of the roots of permanent teeth. It is a manifestation of a process, physiological in childhood, pathological in the adult. Perhaps best defined as a non-inflammatory rather than a sub-inflammatory hyperemia. The grade of hyperemia is nicely balanced between the hypertrophic and necrotic. A variation in either direction signifying exostosis or abscess. The process is by nature destructive and yet constructive. Certain elements are lost; their place is taken by tissue of another type. The presence of an irritating agent is productive of stimulation. Certain cells appropriate the extra pabulum resulting from this condition. Now comes the distinguishing feature of this peculiar process. These cells spend their increased energy in a form of reproduction, resulting in the formation of multinucleus cells, which we call melters, osteoclasts; in this instance, perhaps, odontoclasts. These cells have a special resorptive function, that of feeding on transforming calcic materials. The fact of the process being localized, a single root or tooth involved, leads to a conviction that the irritant is one localized, while the true cause of this process is unknown, deductive reasoning would lead to the inference that it might be caused by the presence of any continuous and mild irritation. Why the hyperemia should assume this particular form is, as yet, purely a matter of conjecture.

As these specialized cells proceed with their work, granulation tissue is forming to fill the vacancy left through the resorptive process, so that by the time the rootless crown is lost, we find the former alveolus filled with organized tissue.

Diagnosis is, of course, doubtful; there is more or less increased tactile sensibility in the tooth. The dark colored border of the gum is found encroaching at this point on the pink territory. The tooth becomes progressively loose, with a gradually decreasing arc of vertical rotation.

*Treatment.*—If by any possibility the condition be recognized, removal of any and all possible causes. Systematic massage, in the hope of re-establishing an equilibrium of the local circulation. Continued applications of a dilute tincture iodine.

That the absorptive cells are not always transformed odontoblasts will be evident when it is recognized that a common cause of the disturbance is found in a protruding root filling.

#### APICAL PERICEMENTITIS.

Recognized here as being the form following the death of the dental pulp.

In most cases abscess of the pulp is an antecedent condition to the one under discussion. This pulp abscess is recognized at times; in fact, usually by a response to thermal changes in the form of heat and not to cold; the heat causes an expansion of the gases generated through decomposition; the pressure causes pain through pressure on nerve filaments at the apex, or in the fragment of pulp retaining vitality. An application of cold through contracting the volume of the gases tends to allay the pain produced by the application of heat.

Usually coincident, or immediately following death of the pulp through abscess, there is more or less inflammatory action in the apical space. The tooth becomes painful to touch, while still responding, though feebly, to applications of heat. This inflammation, as a rule, soon subsides, merely resulting in the formation of scar tissue of a weak type, this acting as a temporary barrier to the passage of poisonous gases, bacteria, etc., from the pulp canal.

This scar tissue being constantly assailed by agents debilitating to the vitality, the resistive powers of its cells has this power so far weakened that the cells succumb, and agents productive of that painful disorder periodontitis hold sway. The symptoms soon become those of an active and pronounced periodontitis. The severity of the process is largely governed by the temperament of the sufferer and the local hygienic condition.

In health there is a sharp line of demarcation between the mucous membrane overlying the alveolar process proper and the mucous membrane reflexa from the cheek or lip. Inflammatory disturbances are followed or distinguished by the deep red of the reflected membrane extending into the territory of the pale pink. Any extension of this line is evidently symptomatic of vascular disturbance. The gum covering the root of the affected tooth becomes dark red or purple through the attendant congestion.

The diagnosis is self evident. A tooth very painful to the touch does not respond to thermal change and the presence of a dead pulp.

*Treatment.*—Remove the cause ; rest, and antiphlogistic measures to restore the lost balance in the circulation. Cleanse gently and thoroughly the canals. Wash out with peroxid of hydrogen till effervescence ceases ; follow this by applications of thymozone, listerin, or some antiseptic in the canals. A loose dressing in the cavity of decay to exclude foreign materials ; nothing but the unirritating antiseptic in the root canals.

Local blood-letting may be necessary ; it is usually advisable. Scarify the gum over the affected tooth and apply tr. iodin et aconiti. Instead of this leeches may be used, or a blister will, at times, suffice.

This is usually sufficient to produce ease. Occasionally constitutional measures may be necessary. If seen early, after cleansing and sterilizing, the simultaneous administration of quinine and morphine may abort the attack and check the formation of an abscess. To accomplish this end a decided dose of quinine must be used, not less than grs. x, combined with gr.  $\frac{1}{4}$  of morphine sulp.

Diaphoresis is desirable. Use hot mustard foot bath ; take in hot lemonade, gr. x of pulv. ipecac. et opii ; then to bed, and well covered, active diaphoresis will result. The following morning,  $\mathfrak{Z}ss$ ,  $\mathfrak{Z}j$  of magnesium sulphate in a goblet of water.

There are cases where fever runs high. These may require arterial sedatives, tr. aconiti, or tr. veratrum viride. They are really necessary, and when used their action must be carefully watched. These measures unavailing, it will be necessary to use such local stimulation as will favor the escape of pus, which will surely be produced. Local stimulation through capsicum bags, never, or very, very rarely poultices (better say never use them), a roasted fig applied to the gum over the tooth till there is evidence of the following condition alveolar abscess.

#### ALVEOLAR ABSCESS.

The foregoing process being unchecked, unsuccessfully combated, there results the formation of pus ; that being the distinguishing feature of the condition under discussion. This is usually made evident by increased soreness, the gum purple now becomes tumid. The surrounding tissues sympathize, and there is oedema, at times, of alarming extent. The alveolar tissues adja-

cent participate in the inflammatory action according to the facility with which the imprisoned pus finds vent. This escape is rarely delayed beyond two to four days. Even in this time inflammatory fever may be pronounced; there may be septic fever.

In some cases the formation of pus is marked by a distinct rigor. The pus finds exit at the point of least resistance, but the destruction of tissue is in all directions, so that the abscess cavities may attain surprising size. The larger cavities associated with delay in evacuation of the pus. Spontaneous escape of the contents of the abscess cavity is generally through a single fistula; more than one is an indication of necrosis.

Inflammatory symptoms now subside, and a patulous fistula with an occasional escape of pus is all there remains in the more fortunate cases.

There are several processes involved from the incipiency of this condition to its termination. First, a periostitis; the periodontitis primary; second, an osteitis following the former, and necessary to the escape of the pus; another periostitis after pus has burrowed through the alveolar process, and a phlegmonous abscess when pus reaches the gum tissue. The destruction of tissue proceeds while either of them lasts. A delay in the first process means destruction of bone substance. A delay in the second may be followed by a stripping of the periosteum from the exterior of the alveolar process, perhaps from the maxilla, and necrosis of the underlying bone. Delay in the final escape of the pus does less damage, the sinus is merely longer; recovery of the diseased gum tissue delayed. This description applies alone to acute abscess. Chronic abscess will require other consideration.

*Treatment.*—The prime indication is early evacuation of the pus. After active inflammatory symptoms have subsided, wash out abscess cavity with peroxid of hydrogen. This to be done through root canals, so as to be assured of the thoroughness of the operation. Charge a syringe and force its contents through. Persist as long as there is effervescence. Now an injection of any powerful antiseptic through the same channel. Dry the root thoroughly, and if thought proper it may now be filled. Rarely is there any manifestation of abscess after the abscess cavity has been thoroughly evacuated, sterilized and cauterized. To fill the root—gutta-percha, carbolized cosmoline and thread, oxychlorid, etc., anything which will be unirritating, unchangeable and will thoroughly prevent the passage of even gas from the pulp canal through the apical foramen.

## CALCIC INFLAMMATION.

This is of two forms, depending on the nature of the deposit. By far the more common of the two is the inflammation arising from the deposition and continued presence of salivary calculi. The less common variety is that produced by the formation of serumal calculus on the roots of teeth. The physical and chemical nature of the first type is too well known to require description. The second, it is the generally received opinion, is, as its nature implies, a derivative from a liquid exudate of the blood. We will first consider the salivary calculus. These deposits are of the nature of mechanical irritants, causing primarily a chronic congestion. This leads to softening, and ultimately to a separation of the gum and pericementum from the affected teeth. Unrestrained, the process extends till there is entire destruction of the retentive apparatus of these teeth, and one by one they are lost.

While such formations are regarded as abnormal, they are so common that we see in them scarcely anything pathological. It is certain, however, that there is present an unphysiological chemical condition, either in the mouth, or in the saliva. Substances which normally should be held in solution are precipitated, deposited.

That the cause may and does exist in the salivary ducts or glands we have evidence in the formation of ranula. In a physiological state saliva is alkaline in reaction, that is regarded as a secretion. Viewed as an excretion this fluid comes in contact with deposits of fermenting food on the necks of teeth; these deposits having an acid reaction. This acid renders insoluble the substances, soluble in an alkali, and they are added to the detritus already present.

As a rule, that is if the process of calcic formation be not too far advanced, removal of the deposits and polishing the surfaces left bare through removal ends the trouble. Slightly stimulant and alkaline mouth washes are all that is needed. Dr. William Atkinson has shown several possible methods by which reattachment of the detached soft tissues may be effected. The formation of artificial pockets left as protected spaces for the growth of granulative tissue; again, sponge grafts. These therapeutic measures are applicable (according to his teaching) to all cases where there has been a loss of substance through inflammatory action.

Serumal calculus is commonly associated with one form of the disease known as pyorrhea alveolaris. In this connection, to be disassociated from that specific disease, well named phagedenic pericementitis. This type of calculus may be found on any part

of a tooth's root. Usually the first place of deposit is immediately above that portion of gum known as the dental ligament. Observed in its earliest stages this deposit will be found before there is separation of tissue at the gingival margin. Its presence at this stage may be detected by the dark coloration it causes.

The deposits are either scaly or nodular, and usually very dark green or black. After a time the overlying gum acquires rather an erysipelatous appearance; their presence causing an inflammatory degeneration destructive to pericementum with which it is in contact. As the case progresses, this becomes evident through a discharge of pus at the neck of the affected tooth. At this stage forming the commonest variety of pyorrhea alveolaris, and the one most amenable to treatment if seen early enough and properly combated. The direct cause of the condition would be difficult to determine; naturally it would be inferred there is a constitutional disorder as primary. What this is; who knows?

Not uncommonly the patients are victims of fermentative dyspepsia. At least have what is known as acid dyspepsia. Again, many of these cases occur in persons of the gouty diathesis; in that event we should expect to find these calculi composed of urates of sodium and magnesium.

*Therapy.*—First wash out cavities, pockets, with peroxid of hydrogen or pyrozone. When effervescence has subsided, remove all deposits possible by means of scalers. Now use trichoracetic acid to complete the work. Follow this with applications of pyro-zones. These measures continued till there is disappearance of pus formation, and the gum recovering a normal color gives evidence of reattachment. After this the continued use of some antiseptic mouth wash is advisable. Much venous congestion will require applications of tannin and glycerin. If stimulation be needed in the pockets a 20 per cent solution of argenti nitras, or dilute aromatic sulfuric acid. For persistent pus formation, aristol, iodoform, iodol, or subiodid of bismuth will be found useful.

#### TRAUMATIC PERICEMENTITIS.

Under this head may be properly classed, with cases arising from blows, falls, etc., those caused by thread biting, excessive use of mallet, wedging, and malarticulation. All these are expressions of blows, mechanical violence in greater or less degree. The inflammation may be of any grade of intensity, varying from an increased flow of blood to the part, a slight hyperemia, to a degree of severity which causes pus formation, even necrosis.

Associated with cases arising from great violence will be found commonly, the death of the dentinal pulp. At first this condition is unrecognized, unless the cause has been sufficiently decided to produce transfusion. This is made evident through the resulting pink discoloration. Ordinarily, the death of pulp is in all probability due to the formation of apical thrombi; virtually, the organ is strangulated. The first indication we have of this condition, is the gradually increasing opacity of the tooth, readily detected by use of the electric mouth mirror. The opacity due to decomposition of the organic matter of the pulp, and contents of dental tubuli.

Whatever the cause of the inflammation in the pericementum, the case is one of bruise. If prolonged use of mallet be the cause, the trouble is usually very slight and quickly subsides. Thread biting not uncommonly gives rise in some cases to a chronic hyperemia—hypertrophic; this leading to exostosis—rather hypercementosis. Wedging, prolonged and too energetic, may have the same effect; notice this in cases which require orthodontic appliances. The vascular disturbance here will be more decided. Mal-articulation—rather too severe an occlusion—produces inflammation, commonly a history of a periodontitis, of gradually increasing severity; beginning as a slight hyperemia, they may end in chronic congestion, not uncommonly in alveolar abscess; this having vent at the neck of the affected tooth.

*Therapy.*—As for a bruise. Antiphlogistic treatment sufficient to meet indications. Rest is always the most important consideration. Procure immobility of the injured tooth: if loose, ligate. Thread biting, a vicious practice, must cease. Substitute for elastic wedges unyielding appliances. Too hard an occlusion must be remedied by grinding off the offending cusps, or temporarily raising the bite. This in view to remove a cause.

In milder cases slight counter irritation will be sufficient. For abscess, peroxid of hydrogen, followed by thymozone or listerin. Some of these cases, apparently grave, may be found so amenable to therapeutic measures, as to form good pillars for bridges. Abscess may not cause death of the pulp.

#### PHAGEDENIC PERICEMENTITS.

This is a specific, necrotic process, often, too often, confounded with the form of pyorrhea alveolaris, arising from the deposition of serumal calculus. Direct cause of this progressive disease is unknown. It is sometimes associated with the gouty and rheumatic diatheses; also, perhaps, with renal disorders. Heredity may be

traced in instances. Its selective action would seem to indicate tissue of a distinctive type; as distinctive, perhaps, as that forming a soil for tubercular deposits. Apparently the disease attacks by preference those having dense osseous tissues. All calcic formations are of a high degree of organization.

Highly organized, that is, osseous structures of the highest type, bear badly any interference with vascular, nutritive supply. The more dense the bone becomes, the smaller the blood-vessels supplying the part, and the more readily occlusion of these vessels is effected, and the necrotic process becomes thus threatening.

Given such conditions and relations, health is maintained, disease resisted as long as the nutritive balance remains undisturbed.

In the rheumatic or gouty diathesis, articulative fibrous tissues offers a field, as do other joints.

The energy of an attack may be expended on this articulating membrane, the pericementum. Naturally, if the case be gouty, we should expect calcic deposits in the form of urates as in any other joints.

Again, function corresponds with structure; dense teeth and dense alveoli are designed for active hard usage. While they receive this, the balance is maintained. Lessen the usage, substitute for food requiring forcible mastication softer material and the balance is disturbed, tissues become atonic through disuse and are less resistant than if in vigorous use. This will be a factor of explanation as to the prevalence of the disorder among gormands. In these cases, in addition to the lactic fermentation about the necks of the teeth, there will be found more or less putrefactive decomposition of the food deposits. This is an additional source of irritation to a tissue already weakened. Pyorrhea alveolaris is one of the symptoms of phagedenic pericementitis.

*Course.*—The first stage of the disease, process, is probably a marginal gingivitis about some particular tooth or teeth; this leads to a softening and separation of the adherent gum. One by one contiguous teeth are attacked; gingivitis, followed by pericementitis, with inflammatory degeneration of the membrane and much of the underlying cementum. Periostitis of the alveolus leads to molecular necrosis of the edges of the alveoli. All the elements lining the affected alveoli produce pus; the degeneration proceeds till the whole retentive apparatus of the tooth is gone and it is lost. Usually cases are seen after the disease has made marked progress; several, perhaps all, of the teeth may be affected.

There is an ulitis, extending from the border of the gum to, say, half an inch or more above. Gum is turgid, purple, generally; teeth are loose and pus is oozing or may be pressed from the pockets between gum and tooth. A scaler will demonstrate a roughness of the denuded portion of the tooth, spaces of degeneration of the cementum. The dark material brought away on scaler is serumal calculus. There is an offensive odor; use of the tooth-brush aggravates the ulitis and its use is discontinued. Deposits of food about these teeth, furnish an additional source of irritation. The process unrestrained, and the teeth are lost one by one. The alveoli absorbed, melted down, but not the overlying soft tissues; these remain to form the *bete noir* of the prosthetic dentist, the soft, flabby mouth. It is possible a specific cause of this disorder may be found in a pathogenic coccus.

The common, spaphylococci and streptococci have, thus far, not been traced as a direct cause for this particular type of inflammation. It would seem more probable the primary cause is in the tissue and not arising from the microbes; as yet it certainly is more rational to regard them more as attendants than as causes.

*Indications.*—Remove first cause; next, remove local irritants. Third, rest; and fourth, therapeusis. If gouty or rheumatic, colchicum and potassium iodid, other possible systemic causes to receive attention. Remove all deposits and dead material, pus, etc. Tie wire or plate into immobility all loose teeth; if mal-articulation, grind off redundant portion. Cases usually require stimulation. Acid sulp. arom. dil. is useful, if the presence of dead or dying osseous matter be suspected. Solutions of argenti nitras to produce granulation in sluggish cases. Much congestion will require reduction as first measure. Preparations of iodin are useful as alteratives and stimulants. The alterative, be it understood, acting as a lymphatic stimulant, not as iodid of potassium, productive of retrogressive metamorphosis. Iodoform, iodol, bismuth or zinc iodid for continued pus formation. Good results have been obtained by applications of caustic pyrozone to the disease pockets.

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The annual meeting of the South Dakota Dental Society, which had been appointed for December 27th, is postponed till June 12th, 1894, by order of the President.

W. O. Robinson, Secretary.

## NEATNESS IN THE DENTAL OFFICE.

*Dr. D. W. Barker, Brooklyn.*

The term "neatness" as here used does not mean merely cleanliness, but the avoidance of those things that offend the asthetic taste; it includes cleanliness as well, but in many offices there are things aside from uncleanness and general untidiness which offend the sense of sight or smell. Let us point out some of them and suggest methods of their prevention.

In many offices there is a characteristic odor to the atmosphere, as peculiar and distinct as the smell of a drug store, or still worse, the smell wafted from the open door of a corner ginnery. It is a carbolic-creosote-oil-of-cloves-dirty-spittoon smell: it is an extremely disagreeable odor to one whose sense of smell is at all acute, and especially so to delicate women. Yet strangely enough the dentist is seldom aware of its existence; it is the air in which he "lives, moves and has his being," and his olfactories have ceased to recognize it. He had better ask his friends who come in if they can detect anything; for the air of the dental office should be free from taint of everything. Perfumery is worse than useless. It is a too-palpable attempt to conceal a worse odor.

To effect purity the room should be thoroughly aired, swept and dusted after every day's work is done. There should not be a bottle of medicine of any kind kept in the operating room, they should all be kept in another room from which they are brought as needed, and to which they should be immediately returned; soiled napkins should not be allowed to remain in the room. A basket of soiled linen is not an attractive sight, however handy it may be to toss things into. And even if it is out of sight it is a nuisance.

The spittoon is perhaps the worst offender, and it is so because it is often used for other than its legitimate purpose; it is made the catch-all for all sorts of rubbish, which should find another destination; moreover, much cotton and paper that is thrown at it lands on the floor, making an unsightly litter, and if the pellets contain medicine they communicate its odor to the carpet. All this may be avoided in several ways.

A waste basket is always an unsightly object and its contents malodorous. A very neat basket is a fisherman's creel, and it has the following advantages: It may be hung in any out of the way place, and occupies no floor space; it cannot be upset and its contents spilled; it entirely conceals its contents, and not holding much, must be emptied frequently; this should receive all paper-

and cotton pads, ends of floss, rubber-dam, discs, etc., and the still more troublesome bits of cotton, spunk and paper used to dry cavities; they stick to the pliers, and when aimed at the spittoon fly anywhere else. Obtain at the drug store a colored glass jar, about two inches high and wide, with a screw metal top, in which make six or eight cuts, radiating from the center toward the circumference, and bend the points slightly downward. This jar can be placed at any convenient spot on the operating tray. The points permit the points of the pliers with their pellet of paper to pass, but catch and retain it when withdrawn.

The whisps of cotton wound on bristles which have been used in the treatment of root canals are also annoyances. If removed from the broach with the fingers, they soil the hands with their foul odor. A handy way to avoid this is to keep a pad of tissue toilet paper, in some place out of sight, and when needed a sheet is torn off, and on this the cotton is wiped without soiling the fingers, and thrown into the basket.

Another cause of an ill-smelling spittoon is the neglect to empty it frequently; blood should never be allowed to remain. The spittoon should be emptied and washed as soon as the patient leaves the chair. If an odor exists it may be removed by filling the vessel with pulverized charcoal and allowing it to stand over night; a small quantity of copperas or washing soda put in the vessel each day is a good disinfectant. A porcelain spittoon is better than metal, being much easier cleaned.

The operating tray and table need frequent and careful attention to insure a neat and tidy appearance: the tray is often littered with paper and spunk pellets that have been left over, whence they fall to the floor. A good receptacle for these is a cement box having a hinged lid and fastened to the tray by a screw through the bottom. It is very convenient to keep this filled with pellets already prepared for use.

The neatest surface for the table is a sheet of plate-glass, under which a sheet of white cardboard is laid; it is not soiled or stained by medicine or blood, is easily kept clean, and, perhaps best of all, the smallest spot of impurity is made conspicuous, hence the necessity of frequent polishing. It also has the advantage of small instruments being easily found on it. The only objection is the noise; every time an instrument is dropped on it there is a clatter. When the patient leaves the chair, every instrument should be removed and thoroughly cleaned before the next patient is waited on. Unnecessary display of instruments should be avoided;

everything not actually in use should be put in its proper place. While operating, no excavator, engine bur, mirror or anything that enters the mouth should be laid on the table without first being wiped with a clean napkin; this is not to take the place of the washing afterwards, but to avoid the disgusting appearance of a table full of soiled instruments; and also any instrument is ready for use if wanted instantly. For this purpose plenty of napkins should be kept on hand; they need not be of fine quality, but should be rather large. The napkins for use in the mouth should be of the finest bird's-eye linen without fringe, and at least eight inches square and absolutely spotless. When stained by medicine or otherwise, they should at once be discarded. For many purposes sheets of compressed cotton sold under the name of cottonoid, may take the place of napkins; it is reasonably cheap, and when used once is thrown away.

There should also be large napkins or bibs for spreading across the patient's chest, to protect the clothing during extracting, impressions, or other operations. These napkins should be of good quality and thick enough not to wet through easily, and large enough to reach from shoulder to shoulder and from neck to waist. Head rest covers should be changed frequently; daily in most offices.

The general appearance of the office should be attractive and pleasing, avoiding all suggestions of its use. Attractive books, the latest magazines, and some picture books for children, should be on the table to invite the attention of the visitor. A large array of dental magazines may indicate a vast amount of erudition on the part of the dentist, but has little interest to the public. The pictures on the wall should be good and of a cheerful character; of course all display of anatomical cuts, charts, diagrams and specimens, caricatures of dental subjects, skulls, teeth, natural or artificial, are in bad taste and therefore should not be tolerated.

Flowers are always proper and will repay the trouble taken to keep fresh ones in the room. They not only bespeak a refined taste, but lend a charm to the surroundings that art or the costliest bric-a-brac cannot possibly impart.

It may perhaps seem that all this must take much time and patience, but much of it can be delegated to the assistant, and as for the rest it is simply the cultivation of a habit that cannot fail to be appreciated by all patrons. It is at least worth a trial.

## PYORRHEA ALVEOLARIS.

*Dr. James Caracatsanis, Athens, Greece.\**

In the first stage of this disease (where the suppuration has only extended to the neck of the tooth), thoroughly remove all deposits, and follow by a scarification of the gums with a steel instrument wrapped in cotton, which should, as a preliminary, be dipped in a 1 to 1,000 solution of sublimate. This is at once followed by an application of one part each of tincture of iodin and aconit. The patient is directed to cleanse the mouth thrice daily with a brush, and to use the following antiseptic lotion :

Tincture of thyme.....	2 grams.
Tincture of eucalyptus.....	1 gram.
Tincture of benzoin.....	4 grams.
Tincture of mint.....	120 grams.
Tincture of lavender.....	2 grams.
Tincture of rosemary.....	1 gram.
Cologne.....	2 grams.
Tincture of annis.....	4 grams.

Sig.—One teaspoonful in half a glass of water.

Have the patient return at the end of a month, and he will be entirely well if he has followed directions.

Second degree; suppuration having extended to the upper portion of the cement. Treatment the same as for the first degree, will be necessary to have the patient return several times for scarification of the gums.

In the third degree, when suppuration involves the whole of the cement and the periosteum, the visits must be more numerous and the sublimate solution made 2 to 1,000, followed by the iodin and aconit preparation.

With this treatment it is possible to get these patients to masticate with comfort who have had the severest suffering, and in whom the slightest pressure occasioned almost unbearable pain.

As to the fourth degree, when the teeth are altogether loose, the same treatment is to be employed, though a satisfactory result is rarely obtained. I have had some half-cures for a time, but it is only in persons with abundant patience; usually the patient becomes wearied before experiencing the slightest improvement.

In the discussion of this paper Dr. J. W. Barton, Paris, Texas, said: In cases of the third and fourth stage mentioned by the essayist, I would suggest that the teeth be maintained in a stationary condition, which is generally easily done by ligatures on the adjoining

\*In the Columbian Dental Congress. Reported by Mrs. J. M. Walker.

teeth, properly adjusted, either of silk or gold binding wire. It is very important to keep the teeth as immovable as possible during treatment.

Dr. James Truman, Philadelphia: Why scarify the gums? The gums are not the origin of that disease. If I understand it, it originates in the pericementum. Pyogenic germs generate there and produce the irritation in the primary stages; as these progress, necessarily the pocket deepens, and the gum is left almost intact. If it is owing to microbic influence in the pocket that this disease occurs, the first thing to do is exactly what this gentleman did, use a powerful agent such as mercuric chlorid in a proper solution. Then he applies iodin and aconit. I cannot comprehend exactly what effect iodin and aconit will have in checking this pathological condition. The effect of aconit, if I understand it is to obtund the nerves more particularly. It paralyzes the nerves, and prevents by their action the influx of blood to a particular part. Iodin is simply an irritant when used in that position, and as far as that goes it has its usefulness, but to my mind, while it may do good, it does not meet the conditions present. We want something more than this. The antiseptic that is used, whether it be mercuric chlorid, hydronaphthol, phenol, or any other agent, must necessarily be used continuously. I think the great mistake made by operators in this direction is that they do not meet the conditions for the future; they consider it cured when they leave it after perhaps two or three to six weeks. But that is simply the beginning. If the patient is to be treated properly, it must be continued through the balance of the life of that patient. I never would allow a patient to go from my office and tell him he was cured, without giving him the proper remedies to use and proper antiseptics to keep the pathogenic germs from producing further decomposition in the future. Unless explained properly, the patient will only return in a few weeks just as bad as in the beginning.

The real scientific data are still wanting in pyorrhea alveolaris. I am pleased with the paper so far as it goes; it meets some of the conditions, but does not meet them all, nor does it meet them in a way to treat pyorrhea satisfactory.

Dr. Caracatsanis replied that he used the aconit and iodin to reduce the inflammation, as a counter-irritant.

Dr. Cravens spoke of a case of pyorrhea alveolaris that he had reported at the American Dental Association last year. He had given nine sittings, treating nineteen pockets, and discharged the

case as cured. After the lapse of over a year the patient returned for examination, and there has been no recurrence. The case was a very extreme one, but the gum had since closed as tightly around the worst roots, as tight as the integument around the root of a finger nail.

In his treatment he anesthetizes locally and scrapes the roots thoroughly, washing out the pockets with hot water. He then fills the pockets with commercial sulfuric, one part to ten of water, applied with a syringe or common quill tooth-pick. At the second sitting, which should not require any surgical operation, the pockets are thoroughly syringed with hot water, four or five times over, followed by a ten per cent solution of nitrate of silver in water, just enough to fill the pockets. At the third sitting bromo-chloralum is substituted for the silver nitrate. Can be used full strength. About four days are allowed to pass between sittings.

If there is any pus after this treatment it is because the roots were not thoroughly cleaned. But if it is done properly there will be no pus after the first sitting. I then have the patient come once or twice every one, two, or three weeks, to have the pockets washed with hot water, and to give them a douche of the bromo-chloralum, diluted perhaps one to five or six, taking occasion to examine, to see if it is all right; but there has been no case in which there was a recurrence of pus.

Dr. W. J. Barton, Paris, Texas: That is a very excellent mode of treatment. I like it. I have had in my practice cases of seemingly successful cure, and I proceeded on about the same course of treatment. The absolute similarity of the treatment is not so important if the surgical operation is thorough, and the treatment is thoroughly antiseptic and cleansing, and the pockets are kept cleansed. I can bear testimony to the fact that a cure, in many cases, is possible under proper treatment.

Dr. Harroun, Toledo, Ohio: When I noticed Dr. Cravens' system of treatment recommended, I had in process of treatment a woeful case, where it seemed as though I should lose the teeth, in spite of all I could do. I had gone through the surgical operation, so I was pretty sure that there were no calcific deposits there that I could reach. I became discouraged, but I ran across Dr. Cravens' method, which I tried with entire success, and I desire to state that the method was successful as claimed by Dr. Cravens.

Dr. Hart, of California, thinks that alveolar pyorrhea is a disease of the periosteum. He uses bichlorid of chiniodin. After one application he makes a small band of pure gold to extend up under

the gum united firmly in place. He also uses a wash of hydro naphthol.

Dr. A. O. Rawls, Lexington, Ky.: I claim that the original cause of this condition is either inherited or acquired, and a result of the use of mercury. Very often inherited, too, from two to three generations. All you can do by your treatment is to arrest it for the time being. There is no special medicament that is better than a perfect surgical operation, but I apprehend the majority of surgical operations in these cases do not go far enough; they only reach the root of the tooth. In most of these operations you are compelled to go beyond the root of the tooth. The process, as a rule, is broken down, the membrane is entirely swept away, and unless you reach the farthest limit you will have no cure.

Dr. Taylor: I should say from this diversity of opinion that there were two kinds of pyorrhea alveolaris: the one we meet in the office, and the one we meet in conventions. Those we meet in conventions are very easily treated, but those we have to deal with in practice are very difficult, and cause us much trouble and tribulation.

Dr. J. Y. Crawford, Nashville, Tenn.: We have one distinguished member of the dental profession in this country who has made a statement in reference to this condition and its management, and I regard that statement as sufficient to settle at once the character of this disease: that it is a local manifestation depending on constitutional conditions in some cases and local conditions in others. This gentleman made the statement that it was a self-evident disease; that he challenged the world to find a single solitary case that did not get well when the teeth are all taken out. That was Dr. H. W. Morgan, of Nashville, Tenn., and to my mind it was the most philosophic expression I have ever heard made on the subject.

Dr. Hoff, Ann Arbor, Mich.: I do not believe that this disease is always, or that it is often, of local origin. I believe that it is systemic, and associated with diseases of the eliminating organs of the body, especially the liver and kidneys. I think where we make the mistake is in not taking into consideration the systemic condition of the patient; and I think when we get fully to understand this disease we will find it has a closer relation to the system and disturbances of the body than we now realize.

Dr. F. Killmer, St. Catharines, Ont.: I have had some experience in the treatment of this disease, and I very much favor the treatment given by the worthy secretary. In regard to the causes, I would say that they are local and constitutional, but I think that

the active agency in producing the disease in the first place is always a local irritant, and that local irritant may cause this disease to progress more rapidly by some conditions. Where a low state of vitality exists, as in strumous habits, the teeth may at once take on this disease.

Dr. J. R. Bell, Cleveland, O., advocated the scarification of the gums. Acute inflammation must be established before you can get complete union at that point.

Dr. Cravens, in reply to the preceding speakers, said the best refutation he could make would be to invite the gentlemen to come to his office and make an inspection of the cases referred to.

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### COCAIN INJECTIONS FOR THE PRODUCTION OF ANESTHESIA.

*Dr. A. Bleichsteiner, Graz; Austria.\**

Under this same title I presented, in the year 1889, in Paris, at the Congress Dentaire International, the results of my experience with cocaine injections for the purpose of painless extraction of teeth. Up to that time I had made more than three thousand injections with 5 per cent solutions of cocaine hydrochlorate. To-day I shall speak about the experience I have collected in executing more than fourteen thousand injections.

In December, 1886, I made the first trials with cocaine hydrochlorate (Merck). I began with 20 per cent solutions. After several trials I diminished them to 10 per cent solutions. After 1887 I used 5 per cent, but since March, 1892, only 3 per cent solutions.

At first I renewed the solution immediately before every injection, but when I came to execute every extraction with cocaine anesthesia I prepared the cocaine solutions in quantities of ten grams fluid each, and I used for the sterilization of the solutions corrosive sublimate. I took ten grams of sublimate solution, containing one gram of sublimate to five thousand grams of distilled water, and dissolved in it five decigrams as long as I used 5 per cent solutions; now I dissolve in ten grams of the same sublimate solution three decigrams of cocaine hydrochlorate, by which I obtain a 3 per cent solution of cocaine hydrochlorate. A drop of this solution contains three milligrams of cocaine hydrochlorate.

\* In Columbian Dental Congress. Reported by Mrs. J. M. Walker

I have vials with a wide neck, which will contain ten grams of fluid, exactly. The vial is filled with the sublimate solution already mentioned, 1 to 5,000. I now add three decigrams of cocaine hydrochlorate, which is weighed in paper cases. By shaking the solution it is made ready for use in a few seconds. The filling of the syringe is done by dipping it without the injection needle into the solution, and then pulling the piston-rod.

I inject only into the gums near the tooth to be extracted, and I always try to maintain the injection needle parallel with the curve of the jaw. This is very important, for if I direct the point too much against the epithelial side, the uppermost layer of the epithelium is lifted up by the slightest pressure on the piston-rod in the form of a transparent blister. Such injections are of no value. But if I put the needle too much toward the jaw, then I discover that I have struck the socket. I may press as long as I like and not get anything out of the syringe. The piston-rod remains immovable, and in trying to overcome the obstacle by forced exertions either the piston-rod or the glass cylinder breaks, as I have sometimes experienced. I must, therefore, hold the syringe after the manner of a writing-pen, and force it between the periosteum and the socket. At this place the injection fluid is pressed by the tension of the periosteum into the bone-tissues of the alveolar wall, and from there into the periosteum. The injection proves to be successful by the gums growing more and more pale, and the formation of a transparent circumscribed blister, which resembles very much a ranula swelling.

Four horizontal and four vertical punctures of one drop each generally suffice. At the mesial labial papilla of the gums I also inject two or three millimeters distant from the gums, pricking toward the distal-labial edge. If the injection has succeeded well after the first horizontal puncture, of which the growing paleness of the gums is a sure criterion, the next puncture being made in the pale place, it is not felt by the patient. In this second puncture the needle is again moved in the direction of the distal-labial edge of the gums, and, after another injection has been successfully made, the whole labial surface of the gum will have grown pale, perhaps including even the two edges of the gums, mesial and distal from the tooth. In the same way I prick the lingual edge of the alveolar wall, first horizontally from the mesial-lingual edge of the gums, and then within the reach of the pale spot resulting from the first injection. The punctures and their effects must be continually controlled by the mouth-mirror, and the growing paleness

of the gums must be carefully observed. If, during the injection, considerable of the injection fluid should flow back along the injection-needle, then the injection must be immediately interrupted; a new puncture and new injection must be made a little distant from the first and in another direction. To avoid swallowing the cocaine solution, which may have flowed back, and the anesthesia and paresis of the uvula connected with it, which usually causes a tendency to vomit, I make the patient rinse his mouth immediately after every puncture, and then continue the process.

If, by the horizontal punctures, the gums grow pale all around, then I proceed to make the vertical or the parallel punctures longitudinal to the root of the tooth. I generally make four successively; first the labial-mesial, the labial-distal, then the lingual-mesial, and the lingual-distal puncture. Especially with the lingual-vertical punctures the assistance of the mouth-mirror is indispensable. At every puncture parallel to the length of the tooth the patient is immediately asked whether he feels the puncture, and only in the affirmative case should the injection be effected. If all four vertical punctures have been still felt, the injection must be every time vertical, then it is desirable to make a few more vertical trial-punctures in the immediate space between the places where the punctures have been made, to be quite sure that all around the socket of the tooth to be extracted there is no sensitive place to be found for the needle. If a difficult extraction is foreseen, I inject also the septum of the gums between the adjacent teeth in the form of vertical punctures. I have now thoroughly distributed the injection fluid all around the socket. The length of the horizontal punctures should not exceed five millimeters, while the vertical punctures shall be made as long as possible, at least above ten millimeters. Many authors advise to wait from five to ten minutes after the injection has been made before extracting the tooth. I consider this superfluous for the anesthesia, and I extract immediately after the injection, and to this I ascribe comparatively few and slight accidents.

We must be careful that with very timid and nervous patients the first puncture does not excite them, which can be avoided by brushing the gums with cocaine before the injection is applied, and that the first puncture is made very gradually, though as quickly as possible; and after very little of the fluid, not even a whole drop, has been injected, the needle is pushed on a little farther, on which a greater quantity can be injected at once. With persons of nervous disposition, the dentist must try to quiet their excitement

by showing himself perfectly composed and at ease, so as to gain their entire confidence. Having thus succeeded, the whole procedure may be properly executed. With a 3 per cent solution we can only experience nervous reflexes, which, however alarming they may seem, are not dangerous.

In the discussion of the subject, Dr. Roberts said that he had subjected to analysis many of the patented nostrums now on the market for "painless dentistry," and found that they all contained from 1 to 3 and even 5 per cent cocaine, antisepticed by carbolic acid; so large a proportion of the latter in many of them that sloughing of the gums, or necrosis of the process, would follow their use. The most recent of these preparations contain a small per cent of tropa-cocaine. He considers the main thing now is as to the effect of the different antiseptics in connection with cocaine, because it seems to be absolutely settled that a 2 to 4 per cent solution of cocaine will do the work harmlessly.

Dr. Pruyn gave the results of his long series of experiments with cocaine, locally and hypodermically, of hundreds of cases in practice, and also his experiments on the lower animals. As the result he concludes that for hypodermic injection a 2 per cent solution with about a half per cent solution of salicylic acid to preserve it, answers just as well as a 4 or 6 or 8 per cent solution. He had used, in some cases, hot water simply, thinking that possibly there might be something in the pressure of the liquid of the solution of cocaine on the end of the nerves that had something to do with obtunding, and found the results to work remarkably well. I dare not say it is just as good as cocaine, but in the few cases I have used it, it has proven that it is worth something. I would like those who are experimenting in this line to try it and see if this application does not bring the same result.

Dr. Cheney: I have tried tepid water numerous times and find it very effective. If the patient does not know the difference it is just as good as cocaine.

Dr. Parker: Isn't that a hypnotic effect? You might just as well use cold water. I would like to hear from some gentleman who has experimented with cocaine on abscessed teeth, or one that was abscessing.

Dr. Freeman, Chicago: I have used it in abscessed conditions and my results were very unsatisfactory, unless I went completely beyond the line of inflammation; then it proved satisfactory.

## THE TEETH OF ANCIENTS.

Dr. J. J. R. Patrick says, in the *Cosmos*, that the first eight volumes of the records of the investigation, covering the examination of the teeth and jaws of human crania in the Peabody Museum of Harvard University, was conducted by Dr. R. R. Andrews, Dr. Jos. King Knight, and Mr. G. W. Newton, anatomist. The total number of teeth examined was 8,468; number diseased, 2,493, a percentage of 29.4.

The upper teeth numbered 5,647, of which 1,451 were diseased, a percentage of 33.04. The total of lower teeth was 2,826, of which 627 were diseased, a percentage of 22.2.

The number of diseased teeth on the left side was 1,273; on the right, 1,220; an excess of 4.17 per cent.

The teeth examined included examples from the ancient Peruvians, 3,439, of which 1,451, a percentage of 42.2, were diseased. California Indians, 4,770; diseased, 1,741; percentage 36.7. Stone Grave Indians of Tennessee, 1,295; diseased, 297; percentage, 23.

There are no valid reasons for separating the so-called "Mound-builders" from the ancestors of the present races of American Indians. Many crania are recorded as the crania of females, without sufficient data. Dr. Patrick has been unable to discover any anatomical difference in the male and female crania whereby the sex may be determined, nor has he found any one who could furnish a key to the solution of the question. Size is no indication of sex.

The depth of the palate bears no relation to the size or breadth of the arch. Some of the narrowest arches have the deepest palates, and some of the shallowest palates have the broadest arches, rendering it impossible to arrive at any rule governing proportions, a fact well-known to anatomists. So also in the case of the teeth and jaws: it appears to be impossible to establish any rule for proportion of parts by the measurement of any portion of the body.

Dr. Peirce, of Philadelphia, says: In examining the 1,200 crania in the Academy of Natural Sciences, in Philadelphia, two experts were employed nearly a month after I spent three afternoons with them. I do not attach much value to their measurements, because a large majority of the specimens were those of advanced years, and in many the teeth were elevated. Again, the teeth differ so much in size that measurements from the first molar to the opposite molar would vary greatly, and there was, consequently, no correct idea of the width of the palate to be gained. But the amount of labor involved in trying to prepare tables can hardly be

imagined. The value of this investigation when it is completed will be very great, because it will give a definite idea of the conditions of the teeth of ancient people, enabling us to compare them with those which are more modern.

Dr. H. A. Smith thinks that when this work is done our notions with reference to the frequency of caries at the present day, as compared with ancient times, will be considerably disturbed. Though only a limited number of crania have been tabulated, all the lesions presented in our race to day are found in a great number of the prehistoric crania, and it would seem that caries was almost as prevalent at that time as now; that consequently caries of the teeth is not a disease of civilization. If this investigation establishes nothing further than that fact, it will be of great value to us. With reference to the measurements given, you will notice that Dr. Patrick has very little faith that any very available deductions can be established by them. He was pleased, however, that Dr. Patrick has concluded to make these measurements of the maxillaries. They will at least furnish data to be used in proving or disproving that certain mental qualities are always associated with peculiarities in the development and shape of the jaws. The work of tabulation is being done so thoroughly that it will probably not have to be done again. It is a work that will not only be a monument to Dr. Patrick, but to the American Dental Association.

Dr. Ottoffy, says: It is interesting to notice the various deformities and conditions that existed in prehistoric times which also exist now. There is also a decided advantage in going over crania in search of these things, because much that is covered by gum-tissue during life can be seen in the naked crania.

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#### EXAMINING BOARDS.

Dr. Peirce says: My views are that competent Examining Boards should be thoroughly prepared to examine and say whether the applicant is qualified to practice dentistry. If we have these, they are for the purpose of judging of the qualification of applicants. They have no right, in my estimation, appointed as they are by the Legislature, to ask the applicant whether he has a diploma, or where he got his education. All they want to do is to ascertain if the applicant is qualified to practice dentistry, and it is not their business to know where that qualification is obtained, so long as he possesses it. The law has no right to ask where the

information was gained. It is simply whether the information is possessed<sup>s</sup> by the individual, and I would have our board so educated, and so thoroughly appreciate their position, that they should hold that ground, and not accept a diploma, or anything but a thorough[qualification, for when we have that the public is protected.

Dr. Guilford says: The remarks of Dr. Peirce pleased me very much, and he covered, I think, the ground very thoroughly. As the law now stands in various States—our own among the number—the State Board is required to examine any applicant, and if he be found qualified to practice, a certificate is issued to that effect. The question is, whether this shall be continued or whether the law should be changed. The student, at present being required to take a three years' course before graduation, finds at the end of the second year, perhaps, his funds are exhausted, and he is not able to continue through the next course. The question then is, shall he have the privilege of practicing awhile to raise funds to complete his education? The only way of doing that is to appear before the board and pass the examination. If he is prepared to pass, I cannot see why he should not be allowed to practice. The board stands as a guard to the public against incompetency. If the man is not competent, it is the duty of the board to find that out and reject him; but if they cannot reject him, certainly, I think, they must give him the certificate. I fail to see any fault to be found with that.

Perhaps a possibility that a student who has attended one or two courses of lectures and has passed a State Examining Board will not complete his education in college. There is a probability of that taking place, but I have never known it to occur. In the cases under my observation they have simply passed the board for the purpose of practicing a specified time, and then continued their course; so it has not acted injuriously in that respect.

It is very well for us to have laws regulating the practice of dentistry, but it seems to me we ought to go further and have something to say in relation to the composition of the boards; what sort of men shall be in them, and what their proficiency shall be for examination; what the requirements shall be and the way of examining, and that it should be somewhat uniform and a method of comparison between the boards. As now done it is very loose. The colleges make strict requirements, and more restrictions are being placed on them each year, while with the Examining Boards there is no restriction.

There is another question, that of examining men who hold diplomas. The point I want to make is, in the first place, under the law as it now stands, different boards are required to examine any one who comes before them, and it seems to me it is not working any special harm. If a student is qualified to pass an examination, he will certainly inflict no injury on the public.

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## CHEMISTRY IN DENTISTRY.

*Dr. E. W. Rockwood.\**

Work in the laboratory should commence as soon as possible, that the learner may become familiar with the action of reagents and with the various manifestations of chemical force. His hand is trained in the manipulations necessary for a successful experiment. He becomes acquainted with the common terms of the science. By handling and testing these he learns by experience the methods of preparation and properties of many of his materials, like nitrous oxid, chlorin, and peroxid of hydrogen. The metals and their compounds offer a wide field for study. By the use of the blow-pipe the changes are noted which are produced by the influence of heat, as well as the action of fluxes. The effect of the oxygen of the air on the metals at different temperatures is also learned. The subject of fermentation is one of interest to the dentist; and laboratory experiments will illustrate some of the most common forms, alcoholic, lactic, and butyric, and show the substances produced by the process. In connection with these simpler forms of fermentation, the putrefactive changes can be shown, with the action of different antiseptics and their comparative powers of checking the growth of organisms, which are the cause of putrefaction.

Many points in physiological chemistry can be practically demonstrated in the laboratory. A complete analysis of tooth substance should, of course, be made. Questions are arising daily which need to be answered by research. New remedies are being continually recommended.

What is their composition? Is their action chemical? Will it probably be beneficial or injurious? The decay of the teeth should be better understood. What produces favorable or unfavor-

\*In Columbian Dental Congress. Reported by Mrs. J. M. Walker.

able conditions? What is the action of the many disinfectants in use? When should the different agents be employed? Do the sulfids or oxids of the metals which may be formed on amalgam fillings influence the decay, and if so, in what manner? No one who is conversant with the many substances employed for cements and fillings believes that perfection has been reached in this line, even if he is able to use them all skilfully. The perfect filling is yet to be discovered. There is also much to be learned of the alloys. Do the metals cause an electrical action when the amalgam has set in the tooth so as to hasten or prevent its decay? The study of the influence of small quantities of a metal on alloys needs investigation. Do the minute amounts of gold and platinum often used, one-tenth to three-tenths of a per cent for instance, have a decided effect on their properties? Tests should be made to determine the best combination, and the proper proportions of these in dental alloys. There is a field for observation, too, in the action of the mercury contained in amalgam fillings and in the coloring matter of plates, as to its state, and whether it produces the effects often ascribed to it on the tissues of the mouth. Every dental practitioner can furnish queries from his own experience, and it is needless to give others; their number is limitless.

There is no reason to doubt that in the future chemistry will occupy a prominent place in studies to fit the dental student for his professional work.

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#### BORACIN (TETRABORATE OF SODA).

*Mr. Denis, Paris, France.*

Boracin is a salt, perfectly purified, resulting from the combination of equal parts of borax and boric acid. This tetraborate of soda is neither caustic, toxic nor irritating, properties that often belong to antiseptics. Moreover, it has the advantage of being tasteless and odorless, and of dissolving in the proportion of sixteen per cent. For the disinfection of the dentinal tubuli, the results are very satisfactory. In the treatment of the mucous membrane it has given astonishing results. There are two cases particularly interesting. The first was on a rheumatic subject, in the treatment of an abscess of the maxillary sinus produced in consequence of the too prolonged retention of a first large molar, which was diseased, having caused many consecutive accidents in connection with caries of the fourth degree. I extracted this tooth, and treated the abscess, excluding all other antiseptics, employing

only boracin. The second day, the suppuration had already begun to diminish, and stopped entirely the fifth day. That happened three months ago, and my patient has not suffered since. His gums, however, without being completely healed, regained the normal color some time since. This rapid result has been obtained by putting one coffee-spoonful of pulverized boracin in the cavity of the sinus (that I took special pains to rinse before performing the operation with boracin water of sixteen per cent). The adding of the powder to the solution has the object of facilitating the absorption of the remedy by the mucus, and in a most direct way, consequently the most efficacious one. The first day, I performed three dressings; the second, third and fourth days, two; the fifth day, only one. Every trace of infection has disappeared since that time.

The second was a person who, in consequence of malpractice in extraction, had the anterior portion of the superior maxilla broken in several places. The teeth were all affected with abscesses.

A month after the extraction of these teeth, the patient felt deep and continuous aching, and the abscess, instead of diminishing, was increasing every day. After the removal of several sequestra, the cavities were washed with boracin water, 16 per cent. The wounds were then saturated with pulverized boracin, with a strip of saturated gauze to prevent the orifice closing too quickly. The next day the abscess had disappeared, and there was hardly any trace of suppuration. The dressings were repeated twice, and within eight days the gum had regained its normal color, though not entirely its normal shape. It may, therefore, be recommended for affections of the buccal mucous membrane, as a daily antiseptic. However, the results I have obtained have not permitted me to substitute it for the different antiseptics already known.

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I have heard many dentists complain that they were unable to save the unused portion of a tube of chlorid of ethyl.

My method, which has proved entirely satisfactory, is as follows: Drop tube in glass of cold water, dry, and then smear point with chloro-percha, heat and press gutta-percha down over the end and hold till cool.

Never having heard of anyone having used this, I thought perhaps it might be original and of benefit to the profession.

*Geo. S. Nason, Omaha, Neb.*

## OBTUNDING THE SENSIBILITY OF THE DENTINE.

*Dr. W. C. Davis, Lincoln, Neb.\**

If we are to eliminate pain from an operation we should first study its cause and the means by which it is transmitted to the seat of realization. We combat the theory that there are any nerve-fibers in the dentine. It can be demonstrated that the dentinal tubuli are filled with a substance other than nerve-tissue. The dentinal tubuli are far too small to contain the terminal filaments of the sensory nerves, or as a vehicle for the conveyance of blood supply for their sustenance. The nerve-tissue cannot live unless it has access to the blood, and it is easily demonstrable that the blood does not enter the dentine. The pulp-chamber and root-canals are entirely lined with a layer of odontoblasts, each of which is connected with terminal fibers of the sensory nerves. From the odontoblasts, extending out into the dentine, we have processes called the dentinal tubes. These tubes are lined with a seemingly non-destructible sheath, and are filled with a fluid, connecting with the odontoblasts. This fluid is protoplasm, not nerve-tissue.

Is protoplasm capable of transmitting the sensation caused by irritation, called pain? If so, it can by this means communicate with the odontoblasts, which in turn communicate with the terminal fibers of the sensory nerves. Thus we have connection with the brain. I think it can be demonstrated that protoplasm can transmit the sensation caused by irritation, either mechanical or chemical.

In view of the fact that we know the cause of the irritation, and the medium by which it is transmitted, and as this medium is not composed of nerve-tissue, and as its destruction is not permissible, nor its coagulation, owing to the jeopardy to the pulp, it is my theory that the only means by which the dentine will ever be rendered insensible to the surgeon's instruments is by the removal of the protoplasm from the dentinal tubes. This we accomplish through the application of alcohol vaporized by hot air, leaving the tubes empty and the sensibility of the dentine obtunded. But as the dentine is hygroscopic—capable again of taking up moisture, from within by capillary attraction, from without by contact with the atmosphere—the next step is to fill the tubuli with some other substance. For this purpose we use a resinous gum in suspension in a volatile oil. Almost any one of the essential oils will answer the purpose. On the application of hot air the oils are

\* In Columbian Dental Congress. Reported by Mrs. J. M. Walker.

easily volatized, and if it has been diluted slightly with alcohol, it will readily go into the tubuli as far as they are empty, leaving the gum to fill the space. To this distance you can excavate with impunity; but your success will depend on the thoroughness with which you extract the protoplasm.

I believe there is no method which has partly obtunded the sensibility of dentine, whether freezing, superheating, application of caustics or devitalizing, that cannot be explained on this hypothesis. This method of obtunding the sensibility of the dentine will tend to success, because a foreign substance is inserted in the place of the medium for transmission of pain.

Dr. Lowry: I want to speak of one point made by Dr Davis, of Nebraska, which I think is good, that the tubuli of the dentine are not occupied by a nerve-filament; the nerve must be nourished by blood circulation. The tubuli of the dentine are too small for the free circulation of the red blood-corpuses, the red corpuscles being three-ten-thousandths of an inch in diameter and the tubuli only one-ten-thousanth of an inch, or one-third the size. Consequently there can be no blood nutrition to that nerve. Secondly, he says it is a protoplasm. I think that is a good point. The tubuli are occupied by protoplasm. His idea is to apply warm alcohol to the cavity of the tooth, and after its evaporation extract the protoplasm, thereby disposing of the medium of sensation.

I have used warm alcohol for two years, almost to the exclusion of anything else, for obtunding sensitive dentine. I knew it was of benefit, though I did not know why.

Dr. Rhein spoke of the advantage offered by chlorid of methyl in its more rapid evaporation, in that it takes about a hundred minutes in the use of chlorid of ethyl to produce by its evaporation a reduction of temperature equivalent to between zero and ten degrees above zero, Fahrenheit; while chlorid of methyl, by its greater volatility, in the course of five seconds will produce a reduction of temperature equivalent to seventy degrees below zero—it will freeze the mercury in the bulb of the thermometer in five seconds. He spoke of the danger of its possible effect on the pulp of the tooth, which must not be overlooked. He said, in all the length of time I have used it, I have not to my knowledge had any bad effect on the pulp apart from some slight irritation of the pulp following in some cases where I was impelled, more through a feeling of investigation than otherwise, to use it in a deeper cavity than I would use it to-day; but in those very sensitive labial and buccal cavities, where we really find the greatest

difficulty in commencing to excavate, or where we want to build up the tooth that is very sensitive, in fact, all cavities that are remote from the pulp, the most infinitesimal amount of the fluid sprayed from the cylinder direct on the tooth will produce an immediate insensibility of the part if it is used with some little intelligence; but all you require is a very small effect. If you allow it to come out in a minute stream in the way in which the chlorid of ethyl comes out, you can entirely remove the pulp from a tooth by its means.

**A NEW APPARATUS FOR MAINTAINING ANESTHESIA WITHOUT A FACE-PIECE, AND WITH THE MOUTH OPEN.**

Dr. Thomas Fillebrown, Boston, Mass.: The necessity of repeatedly re-anesthetizing the patient has always been a great and serious hindrance to the progress and success of surgical operations about the mouth and throat. He had, therefore, endeavored to find the means of maintaining narcosis without keeping the mouth-piece over the face, and had successfully accomplished this object. His present apparatus consists of a bottle similar to the ordinary wash bottle, connected by rubber tubing with a foot bellows. To the discharge tube is attached a double-valve face-piece, such as is used for the administration of nitrous oxid, and a double-end gas bag, for a reservoir. By this means the patient is insured an abundance of pure anesthetic atmosphere for each inhalation. In the bottle is placed a quantity of ether, which evaporates as from a sponge. By raising the tube in the bottle till it is entirely free from the ether, filling the bag, and commencing the inhalation, there will be but a very little ether inhaled at first; then gradually slide the tube down in the bottle, and as it approaches the ether the strength is increased; after one-fourth of a minute the patient can breathe the full strength.

If the mouth is to be operated on, when anesthesia is complete, disconnect the bag and face-piece and open the stop-cock, allowing the air to bubble up freely through the ether. The etherized air is discharged through the other tube a few inches from the patient's face. This will maintain complete anesthesia for any length of time, and not interfere in the least with any operation in or about the mouth; nor will the surplus vapor discharged into the air, sensibly affect either the operator or the assistants. Perfect anesthesia has been maintained for one and a half hours without intermission.

## COCAIN AS A LOCAL ANESTHETIC.

Dr. D. Caracatsanis, Athens, Greece.\*

If its effects can be completely localized, cocaine answers perfectly. Such a method I have found, having applied it practically for several years. The patients have nothing to complain of, not even the slightest indisposition. The operation is simple, within the power of every one; its only imperfection is that its application demands considerable time; sometimes as much as three-quarters of an hour is required for complete anesthesia. The procedure is as follows: I begin painting the gum, next the tooth to be extracted, with a steel instrument wrapped in cotton dipped in a solution of phenic acid, 2 to 1,000, which I have heated. This is followed by the application of the salt of cocaine by means of a pledget of cotton impregnated with it. As soon as the gum shows signs of insensibility, I commence to separate it slowly from the tooth by means of a bistoury. I insert into the space thus effected pledgets of cotton impregnated with cocaine as before. As the anesthesia advances I enlarge the opening to a depth of about one centimeter, on the buccal as well as on the lingual surface. I direct the patient to abstain from swallowing the saliva, to avoid all absorption of cocaine. I take good care not to forget the cotton pledgets placed between the gum and the tooth.

After assuring myself by strong pressure on the parts with a steel instrument, I have my assistant spray the parts with a mixture composed as follows:

Chloroform.....	25 grams.
Sulfuric ether .....	40 grams.
Menthol.....	3 grams.
Cocain.....	1 gram.
Essence of Mint.....	1 gram.

I extract while the parts are being sprayed. The resulting anesthesia is complete; the only condition in which I have failed to produce it being the existence of inflammation or periostitis.

In the discussion which followed, Dr. Seymour said that he used two drops of a 20 per cent solution of hydrochlorate of cocaine and one drop of Merck's carbolic acid, simply as a local application for from five to ten minutes, by means of pledgets of cotton, and in the course of ten minutes could extract the tooth without perceptible pain.

\*In Columbian Dental Congress. Reported by Mrs. J. M. Walker.

Dr. Roberts considers from a 2 to a 4 per cent solution of cocaine, antisepticized with chloral, practically safe and absolutely instantaneous. He also spoke of the favorable results he had obtained in the use of tropa-cocaine, producing longer and more thorough anesthesia, practically without any unfavorable symptoms, from a 2 per cent solution. The greatest objection to its general use is its cost, twenty cents per grain.

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#### "TO THOSE ABOUT TO CONSULT A DENTIST.

"It should not be supposed that a dentist who does not advertise is behind the times. The public should bear in mind that a fully qualified and educated dentist is not allowed to attract business by such unbecoming and unprofessional methods as public advertisements, the exhibition of show cases, or by the inducement of 'low fees,' one and all humiliating methods and affording no criterion of personal skill, which must be a professional man's best advertisement. The public should know that the man who advertises is usually one whose ignorance is so great that he cannot trust to merit and respectability to obtain public patronage, so he resorts to pretension and puffing advertisements, and the public in consulting such a man quickly find their mistake. To avoid falling into the hands of these miserable pretenders, who are bringing discredit on an honorable profession, consult only those Licensed in Dental Surgery of the Royal College of Surgeons (L.D.S.R.C.S.), the only Government guarantee of proficiency."

This sagacious and high-toned piece of advice is taken from a circular, the production of a gentleman who says (on the reverse of the same circular!) that "after many years of unremitting industry and professional experience, both in hospital and private practice, I have attained to a position in the front rank of the dental profession. I hold the highest dental qualification obtainable in the world, and in my practice combine the methods of the various schools of dental surgery." We need make no comment, but we may inform the Royal College of Surgeons of Ireland that, as we gather from the *Dental Register*, they are the bestowers of "the highest dental qualification obtainable in the world," and we may perhaps add that the circular of this Admiral Crichton of dentists was found in a letter-box in the West-end of London, the envelop (with the writer's card enclosed) bearing the superscription, "The Cook Housekeeper!"

*English Ex.*

## NITRATE OF SILVER.

Dr. J. Taft, Cincinnati, remembers that more than forty years ago Professor James Taylor recommended the use of nitrate of silver in the treatment of teeth in his lectures in the Ohio College of Dental Surgery. Professor Taylor recognized that the darker varieties of decay were of slower progress than the lighter, and the suggestion was that by the use of nitrate of silver light decay would be changed to dark, and thus its course made slower. He used it in the deciduous and permanent teeth alike. Dr. Taft has ever since used it in that way. Under favorable circumstances decay will be stayed by it. It is certainly retarded, if it is not absolutely arrested, more especially in the deciduous teeth.

Dr. James Truman believes the use of nitrate of silver is one of the most important things that has been brought forward within his memory.

Dr. Peirce says he can not remember the time when he did not have nitrate of silver in his office. He has always used it to remove sensitiveness, not for arresting decay; in this field Dr. Stebbins is the first who has published a systematic series of experiments showing its value.

Dr. Peabody states he has used this agent more than twenty years for removing the sensitiveness of teeth at their neck, but has only used it for twelve months to arrest decay, and has never heard of its use in changing light decay to dark.

Dr. Patterson, Kansas City, is especially interested in the use of nitrate of silver. Young patients with incipient decay where the dentine is so sensitive it is almost impossible to insert a filling-material, nitrate of silver will be found excellent.

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In the treatment of abscess of the maxillary sinus, the offending tooth is first extracted—most usually the second bicuspid. The cavity of the sinus is washed with hydrogen peroxid, followed by an injection of

Chlorid of zinc.....	1 gram.
Phenic acid.....	5 grams.
Distilled water .....	100 grams.

A small pencil of gutta-percha saturated with chlorid of zinc is placed for twenty-four hours inside of the fistula, and the edges close up by deep cicatrization, very rapidly. With this treatment he has never had any repetition of the disease. *E. Lecaudey.*

## THE SPELLING OF SOME MEDICAL WORDS.

At the annual meeting of the American Medical Editors' Association for 1893, a paper with the above title was read by Dr. George M. Gould, of Philadelphia, author of a medical dictionary and several other medical works. The paper was published in *The Medical News*, of which Dr. Gould is editor, also in the *Buffalo Medical and Surgical Journal*, and has received hearty commendation from a considerable part of the medical press. The following extract contains its suggestions for simplified spelling:

"There is not a singl argument of value against a moderate and at least a smal beginning of some kind of spelling-reform of our intolerabl English orthografy. As regards the speling of medical words, any argument has less weight than as regards uther words. We owe it to our profession to be progressiv in this respect—at least, not to be a ded-weight to the car of progress, and, at the very least, not to pull'backward, like an over-obstinate hors when the wagon (with one *g*!) is pusht on to our heels. Wherefore, brethren, wil you not assent to the litl advance already gaind, and wil you not asent to a few litl timid steps further? Every argument of logic and uniformity, and every motiv of good-wil and interest in progres is on this side.

"Why shal we not drop the conjoind letter dithongs in al words? Let us spel al our words drawn from the Greek *haima* with the singl vowel *e* instead of *æ*. Let us say *hemorage*, *hemostatic*, etc., clear thru the list. The same with all uther *ais* usually speld *æ*, as in *orthopedic*, *pediatric*, *anesthetic*. The same with *œ*; let us accept *edema*, *celiotomy*, *diarea*, *fetus*, etc.

"Let us adopt, with never a wry mouth, the 'American speling' of *honor*, *center*, *meter*, (al the meters and literes!), *program*, and the rest.

"Let us get a chart for the rules for speling chemic\* terms adopted by the American Association for the Advancement of Science, and hang it in frunt of our desks, and never spel *iodid*, *sulfid*, *hydrid*, *morfín*, *chlorid*, etc., with more *es* than we should. It is easier to spel them without the *es*!

"Let us be sensibl rather than conservativ."†

\* Dr. Gould also advocates dropping *al* from "chemical" and similar adjectivs. The U. S. Board'on "Geographic" Names evidently agrees with him in this.

† Our language of the double l's and s's is the spelling of *our language*.—ED. ITEMS.

## EXTRAVAGANT GOLD FILLINGS.

Dr. Sandré, of Vienna, writes to the *Cosmos*:

Last week I terminated a "great work" for a lady patient of mine, consisting of twenty-three gold fillings, consuming three and two-eighths ounces, or twenty-six books of gold. The work was done with the automatic mallet and non-cohesive gold. I annealed the foil to such a degree of cohesiveness as the case demanded.

One of these fillings is a large contour filling on the first upper molar, right side, which consumed more than two and a half books of gold. This is the largest gold and the largest contour filling I ever made in a practice of ten years. The tooth was badly broken down; considered as a tooth, it is one of the largest first molars I have ever seen.

A few days afterward I was speaking to a fellow-practitioner of this large filling, and he showed me a number of the *Oesterreichisch Viertel-jahrsschrift für Zahnheilkunde*, where a graduate of the Philadelphia Dental College, R. Antoine, M.D., makes the assertion that, at a clinic, Dr. W. G. A. Bonwill filled a large mesial masticating cavity of a first molar, packing three-eighths of an ounce of gold in the tooth in only forty-five minutes.

Now, I will ask the question, Is there any dentist in the United States, the high school for gold-filers, who ever made a larger filling than two and a half books of gold, as in my filling, or three books of gold, as Dr. Bonwill has done?

Would it not have been more commendable if Dr. Sandré had shown us how to avoid such extravagant gold fillings? Is such tedious, expensive work as useful as filling the main portion of such large cavities with oxiphosphate, gutta-percha or amalgam, covering this with gold?

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INFLAMMATION.

Prof. Gustavus North, Springville, Iowa.

Inflammation is a term implying a whole series of processes, partly vascular, partly textural, and these processes admit of great variety of combination. We have various characteristics of inflammation, but the capacity of the term cannot be fully indicated without describing briefly the process to which the term applies.

Four cardinal symptoms of inflammation are well recognized—redness, swelling, pain and heat, with impaired functions. The redness is from an increased flow of blood to the part. The swelling is caused by an increased volume of blood in the parts, and after a time the swelling is increased from exudation. The pain is caused by pressure on the sensory nerves, or by chemical irritation. The

heat comes from the excessive flow of blood through the parts in the stage of hyperemia.

The vascular change is produced by irritation, which causes a general dilatation of the vessels, first of the arteries, then of the capillaries and veins. The flow of blood through the widened channels is more rapid at first; this is the stage of hyperemia. After a time the speed diminishes and the flow of blood becomes slower than in the normal condition. This constitutes the stage of congestion. During this stage we have a migration of the blood corpuscles through the walls of the veins and capillaries into the surrounding tissues, but not from the arteries.

Associated with the passage of the corpuscles there is always an escape of liquid which is comparatively rich in albumen. This is the stage of exudation or infiltration. All these changes and stages depend on a molecular alteration in the walls of the blood-vessels.

The inflammatory changes in the blood-vessels must of necessity be associated with tissue changes. These changes vary with the nature of the irritant, and with the intensity of the inflammation, also with the character and extent of the vascular disturbance, and with the nature of the tissue. Inflammation cannot exist without molecular death.

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The Board of Alabama wants to put a lever under the colleges and raise them up, but we have no leverage except the students they send us. We are sentinels, guards, set to watch the gates into the profession in Alabama, and we should object to having young men settle among us who are not thoroughly prepared to do honor to themselves and to us. Men have come before us, holding college diplomas, who had never filled two teeth in the mouth, and we found it necessary to require even holders of diplomas to submit to rigid examination.

We feel no opposition to the young men who come before us. We want their good will: and to encourage them, we almost violate the law ourselves in giving permits.

Dr. T. M. Allen: The board never rejects a man who is up to the standard. It is not the fault of the board if he falls below it. Dental colleges cannot in even a three-term course give both the literary and the scientific education, but they should require the previous attainment of the former from every student admitted by them.

## DENTAL STUDENTS.

*In Alabama Association.*

Reported for ITEMS OF INTEREST by Mrs. J. M. Walker.

Dr. T. M. Allen believes there should be more thorough preliminary education of dental students. Young men who have not had even a common school education, cannot be expected to grasp the technical language of a dental college curriculum. If the colleges were more strict in their requirement, young men coming, diploma in hand, before a State Examining Board, would not fail so ingloriously. They sit mute and motionless through the sessions of an Association meeting, not because they have no ideas, but because their education has not been such as to fit them to express themselves clearly and definitely. They do not attempt to speak, because they know they cannot pronounce the English language, and they dare not write because they know nothing of grammar, and cannot even spell correctly.

Then again, when a young man is invited and urged to prepare a paper, do we thank him and applaud him for the effort he has made? No; because he may have left some little loophole unguarded, we jump on him and tear him all to pieces. It is perhaps his first paper, but he resolves he will never again make a fool of himself. He feels disheartened and discouraged, and perhaps gives up the society altogether.

If a young man gives us a paper, pick out its best points; be lenient with its possible defects, encourage his efforts, and he may soon give us valuable papers.

Dr. E. S. Chisholm: Dr. Allen has expressed it exactly. Old as I am in society work, I never come before you with a paper without expecting to have it torn to pieces, and it seems to be done with a spirit which disgusts and discourages a man. We show no quarter.

Dr. Chisholm says the work done by the State Examining Board during the past twelve years in which he has served continuously, has made great advances, especially in the standing of students. Though there are great deficiencies, yet it is as nothing compared with the men who came before the first board. Many young men who "take up" dentistry are "poor, but respectable." Too poor to get an education, and too "respectable" to do the work that can be done without an education. They consider labor a dis-honor, hope to live without work, and they think they see a chance to do this in dentistry.

## NECROLOGY.

### DEATH OF DR. CHARLES KINGSLEY, OF PARIS.

All the profession will learn with regret that Dr. Charles Kingsley died in Paris on the 22d of October. He was ill less than two weeks, suffering from pneumonia and congestion of the lungs. The crisis was supposed to have been passed in safety when heart failure suddenly supervened.

Dr. Kingsley was born December 3d, 1841, at Pittsford, Vermont. While preparing himself for college he earned the necessary fees by teaching, and finally, while a student of the University of Rochester, the civil war began, and he enlisted in the Union army in 1864, remaining till he was mustered out in 1865. In the same year he began the study of dentistry in the office of his brother, Dr. Norman W. Kingsley, and because of a natural aptitude rapidly became very skilful, both as an operator and in other branches of dental work. He was the assistant and associate of his brother for more than five years, and in December, 1871, formed a partnership with Dr. Crane, in Paris. This partnership continued till it expired by limitation thirteen years later, since which time he has been in independent practice at No. 9, Rue Auber.

During his career in Europe Dr. Charles Kingsley acquired the distinction of being one of the most skilful Americans practicing abroad, and rapidly obtained a very large and remunerative practice, his patients being of the most select order, including many of the nobility from various capitals of Europe, and the most distinguished Americans traveling abroad.

Among his brother dentists he was held in high esteem, and contributed as greatly as any towards maintaining the high character, dignity and good name of American dentists in Europe. He was Vice-President of the American Dental Society in Paris, of which Dr. Thomas W. Evans is President.

He was a man of studious habits, refinement of manner and culture, a master of his profession, and of sterling integrity.

He married Miss Jessie Bradbrook in 1871, and she survives him. He also leaves two sons, the elder of which is at Yale University, and the younger at school in England. His body was cremated at Pere la Chaise, October 24th. *R. Ottolengui.*

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Dr. Frank Holland does not attribute any curative power to peroxid of hydrogen. It simply breaks up the pus masses and washes it out.

## CURRENT THOUGHTS.

### FILLING WITH AMALGAM AND GOLD.

*Dr. W. F. Simonton, W. Va.*

Let us consider, for instance, a distal cavity in the first molar, and a mesial cavity in the second, perhaps as difficult an operation of the kind as any dentist will be called on to perform. First, secure sufficient space by pressure or cutting. Cut back the walls, if possible, till some enamel is reached, special attention being given to the lower or cervical wall; cut it down till it is smooth and strong, with an abutment of dentine back of it, and do this even if it carries the cervical wall below the gum margin, and do not trust, if it can at all be avoided, a thin beveled cervical wall. Cut a retaining-groove across the cervical wall or bottom of the cavity, letting it extend up the sides out through the coronal enamel, if a coronal opening has been given to it. At the ends of the groove across the floor, where it turns up the sides, make the angles somewhat acute or with slight pits; and the groove across the floor far enough from the enamel to leave standing a small abutment of dentine between the groove and the enamel. Prepare a small piece of amalgam, well washed with alcohol and pressed dry with pliers, and place in the cavity to fill or nearly fill the retaining-groove, but be careful to keep the amalgam back from the enamel or outer edge of cavity at the cervical border. Before the amalgam is set, place on it small pieces of gold, not pellets, but foil folded and cut in very small squares, or Watt's crystal gold. Press these first pieces down lightly, using a small instrument, and applying it all over the gold; the mercury soon shows through; then apply more gold, letting it extend to and beyond the cervical edge of the cavity.

It may be well here to diverge somewhat to speak of cavities where it is impossible to leave an abutment of dentine at the bottom, because the dentine may be decayed below perfect enamel, and the decay extend out to the enamel at the cervical wall. This will give a pocket or pouch-shaped space alongside the enamel at the cervical border. If so, be careful not to fill this pocket full of amalgam, the idea being to have only enough to furnish mercury to amalgamate the first few layers of gold next the cervical border. After the mercury ceases to show through, press the gold down firmly, packing it in the angles or pits at end of lower retaining-

groove, which will be found to hold this part of the filling securely. The filling will now be about the eighth of an inch above the cervical wall, and firmly held by the ends of the retaining-groove. Proceed now to condense and finish, first using pressure by means of a burnisher or any suitable instrument, afterwards the mallet, if thought necessary; but pressure is generally sufficient, and it avoids danger of shattering or crumbling this wall. Start the filling in both cavities before completing either, but commence the filling in the distal cavity as it is more convenient, and complete the filling in the mesial cavity first, as a portion of the front teeth being removed gives much better access to the mesial cavity and also admits the light, while if the mesial filling is completed and partly finished, it acts as a reflector on the distal cavity, making it much lighter during the filling.

By following this method and not using any matrix, we get an amalgam or substance, for filling the cervical portion of the cavity that is soft, tough and easily adapted to the enamel edge. Be sure this important part of the work is well done, and no overlapping of the filling left at the cervical wall. This opportunity to finish will be more appreciated by recollecting the difficulty at the cervical border, where the teeth are long, or the filling extends to or under the margin of the gum, or the neck of the tooth is small, and that portion of the tooth next the gum slopes from a large coronal surface to meet a narrow neck. In short, the method tries, at least, to take into consideration the fact that these fillings almost always fail first at the cervical border, and are also most difficult to make properly here. The use of the matrix cuts off all light at the cervical border. If the enamel be injured by the first few blows of the mallet, or a small portion be scaled off, the operator knows little of this after the filling is commenced.

If it be desired, a matrix may at this point be applied for finishing the filling. This method of starting a filling and of finishing the cervical portion is often useful in proximal cavities of incisors, whether there be one or two fillings. It is often an excellent plan to put in the cervical part of the filling and at least roughly trim off the surplus gold, as we get much better access to the cervical part and can see it more clearly before the main body of the filling is inserted. But be particular in all cases to see that every part is done thoroughly and the finishing perfectly restores the contour of the tooth.

## ANTRAL TROUBLES.

*Dr. C. A. Rominger, Reidsville, N. C.*

Diseases of the antrum, resulting from dental troubles, are by no means infrequent, and are often of a very grave character.

Mr. M., who had been treated by a physician for six months for catarrh, was suffering with engorgement of the antrum from an abscessed tooth. The floor of the orbit was so much elevated as to force the ball of the eye almost wholly out of the socket. On trial, the ball protruded an eighth of an inch beyond the ridge of the nose. The first superior molar on the left was extracted, as the offending cause, and an entrance made through the socket into the antrum, and then syringed out from the socket through the nose. It was so offensive that all windows and doors had to be opened to get rid of the awful stench.

Such cavities should first be thoroughly cleansed with peroxid of hydrogen for several days, till the generation of pus ceases, and then followed by a fifty per cent solution of campho-phenique in alcohol. This is antiseptic, and, at the same time, is mild enough to stimulate the parts to healthy action.

Mrs. S. had suffered sixteen years with chronic abscess of the antrum resulting from an offensive molar. The tooth was removed shortly after the trouble began; but no entrance being made into the antrum and no drainage afforded, the disease smoldered on like the pent-up fires of a volcano, with occasional eruptions and emissions from the nose.

She was a great sufferer from what she and the physicians called neuralgia and catarrh. The bicuspids and first molars on the left were gone years before I saw the case. On close examination I found a little fold, or fissure, in the gums on the alveolar ridge near the position of the second bicuspid. The gums seemed to be healthy; but on forcing an explorer through the fissure, I found the bone to be in an unhealthy condition, not what you would call necrosed bone proper, but carious, so that the probe would enter it, and when pulled out it felt as if some clammy substance was cleaving to it.

The patient had suffered so long and so greatly that her mind was greatly impaired, and her constitution very much broken down. So, without expressing a diagnosis at all, I cocainized the parts by injections, and bared the bone for an inch in length and half an inch in width along the alveolar ridge, and then with a large and sharp round bur I cut away all diseased bone. Then

with a long implanting drill I made a free entrance into the antrum. Thus having free access into the antrum I washed the cavity well, discharging the medicine through the nose. This treatment was kept up for more than a week at intervals of two days each, and then the patient was dismissed with instructions for self treatment. She soon recovered the proper use of her mind and was restored to normal health.

*Southern Journal.*

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### MATRICES.

It is a test of an operator's judgment sometimes to determine whether he shall use a matrix or merely a support for his filling material. There is a wide difference. Webster says that "a matrix is a mold; the cavity in which anything is formed, and which gives it shape." If this definition is correct, not everything which dentists build gold against should be dignified as a matrix. A neighboring tooth often serves the purpose of a support, but who would regard a supporting tooth as a matrix?

A matrix for filling should offer advantages, such as thinness for economy of space; close conformity to cavity-margins, however irregular; sufficient malleability to enable the operator to bend and dilate it at any part and to any extent desirable; it should be cheap enough to be thrown away after once used. Some proximal spaces are impassable, of course; but extensive preliminary wedging should never be necessary to adjustment of matrix or support, otherwise the device is too thick and badly designed, and the operator's judgment is at fault.

Some operators—perhaps many—use closely adapted matrices for gold filling in compound proximal cavities in bicuspids and molars, and it is not my purpose to criticise their methods, but gold cannot always be depended on for correct adaptation at margins, unless in excess, and close matrices do not admit of excess there. Perhaps there are operators who can secure exact marginal fullness with gold, no subsequent dressing or finishing being required, but most of us find it necessary always to dress away some at the margins for security.

By a support, as distinct from a matrix, is meant something that can be placed between two teeth, one or both of which may require filling, and serve to support the filling-material till secure, but without effect on the contour. A supporter should also economize space between the teeth to the same degree as a matrix.

Nothing more than the slightest primary wedging is really necessary for adjustment of a supporting device of proper thinness. A supporter should be of metal, very thin, springy, non-malleable, with no attempt at conformation to cavity-margins. The margins should stand free, particularly in filling with gold, that an excess of material may occur there for subsequent dressing down.

*Plastics.*—In filling with amalgam or cement in compound cavities in bicuspids and molars, matrices are advantageous. Where contouring with plastics is intended, we reverse the rule for gold, for the matrix ought to be closely adapted at all involved margins, and should mold the contour to any desired degree, because the plastics are accommodating, and with careful manipulation a perfect cast of a matrix and approved marginal adaptation are attainable by all.

Matrices offering the advantages named in this paper may be constructed of German silver, rolled to United States standard wire gauge, Nos. 30 to 34, strips of which should be cut and fitted around the *cervix* of the tooth, and to conform to the curves of the gum as in fitting bands for gold crowns, exercising care to avoid occlusion with teeth of the opposite jaw. A band should close with a lap-joint next to the cheek, and should be fastened with soft solder. In position, such matrix may be dilated or bulged at any part, the metal yielding easily to moderately firm pressure, so as to conform to a proximating tooth or give fullness.

Amalgam thus supported may be permitted to stand several hours to acquire hardness. No wedging, no ribbon-saw is necessary, because the band has guaranteed enough space for finishing purposes, admitting the thinner strips employed for that purpose.

In filling with gold in the same class of cavities, plain shields of the same thin German silver will hold all the space required, and at the same time, if a little more space should be desirable for finishing, it may easily be gained during the operation of filling by driving the gold firmly against the supporting shield, the gold actually wedging the teeth slightly apart.

I have made beautiful and durable contours with os artificial by using the band matrix—a fact which is merely mentioned here to show the scope of utility of the band device. The German-silver band is easily constructed, easily adapted to margins, and made to mold any vertical contour, and is cheap enough to throw away after being once used. To remove one of these band matrices, the lap-joint should be opened, though it often may be done without.

*Dr. J. E. Cravens, in "Cosmos."*

## UNNECESSARY BURDENS OF DENTAL STUDENTS.

*L. P. Haskell.*

The simple process of swaging an upper plate is herewith made a burden for the student :

**QUESTION.** *Describe process of swaging a full upper plate?*

**ANSWER.** Place die on bench with plaster model near, on which is marked outline of plate ; anneal the metal by placing it on a support of plumbago or charcoal, and by means of blow-pipe heat it (if gold) to a cherry red (less if silver), and plunge it in cold water to cool it ; then place annealed plate in proper position over face of die ; hold it firmly with one hand, and with a wooden or horn mallet form first the center of the plate over the hard palate, till this part is well driven down and adapted to surface of die ; repeated annealings of plate may be necessary to accomplish this, but before each annealing the plate should be subjected to the acid bath (sulphuric acid, 2 parts, water 1 part) to remove any particles of zinc, and, after swaging, any particles of lead that may adhere to the plate ; then bend down with mallet the outer edges of plate over the ridge, far enough to meet outline drawn on plaster model ; when plate is well adapted to face of die, and especially central portion, it is again annealed and carefully placed between die and counter-die ; if the outer edges are carefully and slowly, with repeated annealings, worked by mallet over ridge, there need not be any folds or creases ; some prefer placing several thicknesses of soft paper between die and plate ; then place them, with die down, on an anvil, holding the die with the left hand, and strike the die a slight blow with a hammer of three pounds weight, with handle one foot long ; separate the dies, loosen plate from counter-die, and examine to see that it has not moved out of position ; if not, return plate to dies, and strike several moderately heavy blows, repeat annealing and return plate, and strike heavy, fair, sharp, evenly distributed blows.

**QUESTION.** *How may the force of the heavy blows be evenly distributed, and the base of die be uninjured?*

**ANSWER.** By using a cone of zinc or iron, with a base nearly equal to that of the die and several inches long, with a flat apex, on which to strike with hammer.

**QUESTION.** *How should the Gilbert vacuum cavity be formed in the plate when swaging?*

**ANSWER.** By defining the form when central portion of plate is adapted to the die, and afterwards, during swaging, using chasers made of hard wood, bone or ivory, carefully thinning and rounding edge of each, and frequently renewing the edge, which is one-quarter inch wide ; place the edge of the wooden chaser in the imprint of the vacuum cavity, and, holding it at right angles, strike light, rapid blows on the end with a mallet, repeating by passing around the chamber or cavity with the instrument till outline of cavity is sharply defined and the metal not indented or bruised ; a chaser made of soft rose-copper answers well as a finisher if carefully used.

## ITEMS.

One of the best lubricators for the oil stone is glycerin, as it does not dry into the stone and harden the surface as does oil, and is easily cleaned with water. *T. S. Hitchcock, Oswego, N. Y.*

\* \* \*

EDITOR ITEMS:—In September No. of ITEMS OF INTEREST, page 553, you give a new preparation for treating infected teeth, viz.: “Kaliun natrium.” Now, you do not say in what proportion it is to be used, nor do you say what preparation of sodium or potassium is used. Please give in your next issue the proportion of the mixture and what preparation of each is used, as there are so many of each.

*J. F. Johnston, D.D.S., Ruston, La.*

\* \* \*

To prevent rubber from becoming porous while vulcanizing, use with the new rubber the finishings of previous plates. When packing a thick plate, or a thick portion of a plate, wet or warm the rubber, and dip each piece in the filings, and pack and vulcanize as usual. The first filings or scrapings contain plaster that cannot be washed off, therefore they must not be used. Vulcanize carefully, and use plenty of plate filings, sometimes picking up some with the fingers, and sprinkling on the rubber while packing.

*W. S. Simonton, Cameron, West Virginia.*

\* \* \*

I inclose a formula of an alloy that will melt at 200° Fahrenheit. This is valuable for crown and bridge-workers. It may be poured directly into a plaster impression of the teeth without the necessity of drying the plaster.

Lead.....	2 parts.
Bismuth.....	4 parts.
Tin.....	1 part.
Cadmium .....	1 part.
Melt in order given.	

*B. A. Moyer, University of Buffalo.*

\* \* \*

TO TAKE AN ACCURATE BITE.—Make a trial base plate of modeling compound. Thoroughly harden it. Superficially soften the ridge. Place the base-plate in position in the mouth, and require the patient to close the mouth tightly enough to indent the compound with the opposing centrals. (If there are none, supply artificial ones mounted on compound.) Require the patient to bite several times, noting the result each time. Then press against

the chin, and require patient to bite as far back as convenient. When you are satisfied that the bite is natural, mark the indentation that you wish as a guide, and in the base-plate, corresponding to the gums, make a vertical groove in line with the division between the opposing centrals.

Remove and take the bite in the usual way, using the groove as a guide, and not letting the teeth sink into the wax till the centrals are in proper position with respect to the groove. Require the patient to bite as far back as possible. If the bite is too far forward, it can be righted on the articulator by replacing the trial base-plate on the model and moving model as indicated by indentation.

*Dr. W. D. Tickner, Randolph, Wis.*

\* \* \*

**EDITOR ITEMS:**—If we are developing into a race with "small jaws," as is said by Eugene S. Talbot M.D., D.D.S., caused by the undue extraction of the permanent teeth, I would like to ask why haven't we a breed of sheep without tails? (or short ones.) I have asked the oldest citizens concerning the clipping of this member, and they say it has always been the custom as long as they can remember. Would my idea not hold good so far as circumcision, which has been the custom among the Jews thousands of years before our teeth were so recklessly extracted?

*J. E. McNeal, Zanesville, Ohio.*

\* \* \*

**PYROZONE IN PYORRHEA.**—This agent is similar in its action to peroxid of hydrogen, though more beneficial, safe, and reliable. It retains its qualities indefinitely, not deteriorating, as does peroxid of hydrogen. It is prepared in solutions of different strength. The 5 per cent is perfectly safe for use as a mouth wash for inflamed gums. The 25 per cent is a caustic solution, and is used in many places where peroxid of hydrogen is indicated. In the pockets of pyorrhea alveolaris, where we look for pus accumulation, if applied on a shred of cotton, pus boils out profusely. It works nicely, and is successful.

*L. D. Carpenter.*

\* \* \*

Very much force in screwing down the vulcanizer is worse than not enough. Many a nice packing is destroyed, and sometimes the vulcanizer, too, by too much force. A new packing ring requires considerable force, but afterward if a little wet stove blacking is painted over it with a small camel's-hair brush, the vulcanizer can be made steam tight easily, and by using only sufficient force the packing will last much longer.

## OUR QUESTION BOX.

With Replies From The Best Dental Authorities.

[Address all Questions for this Department to Dr. E. N. Francis, Uvalde, Texas.]

**Question 125.** Seven years ago a gold filling was inserted in the right upper central incisor. The pulp soon died and a chronic abscess was formed. The pus has created quite a cavity above the tooth. The foramen is large, and about one-fourth of the root is absorbed. It has been thoroughly cleansed with antiseptics and disinfectants. I have forced 95 per cent carbolic acid through fistula, but fail to effect a cure. What further treatment do you suggest?

You can effect a cure by using a 5 per cent solution of pyrozone, carefully treating abscess through pulp canal while pus is indicated, afterward filling with gutta-percha.

*F. K. Heazelton, D.D.S., Trenton, New Jersey.*

Cut diseased portion of root away with large bur through the gum. Finish smooth with finishing bur; cleanse thoroughly, and fill with campho-phenique, chloro-percha, and gutta-percha points.

*A. A. K., Cincinnati, Ohio.*

Fill root with a non-irritant chloro-percha, a little forced through the foramen will do no harm. Then treat the fistula, using 10 per cent sulfuric acid, followed by listerin as a wash.

*A. L. Whitney, Denver, Colorado.*

Try listerin, forcing it through the tooth; also give patient a bottle and broach, and instruct how to wrap broach with cotton, and to pump the listerin through the root. The patient should apply this two or three times a day till tooth becomes firm and discharge disappears.

*William F. Schwaner, Winterset, Iowa.*

First being satisfied the root canal and abscess tract is aseptic, I would saturate a wisp of cotton with crystals of iodin cut with pure wood creasote to the consistency of cream, and by means of a rubber piston (base plate rubber), pump the entire tract to the fistulous opening, and at the same sitting fill root canal with chloro-percha, followed with a proper sized gutta-percha cone. Let the case rest for a week or ten days. If the abscess still continues, dissect off soft tissue, making cuts in form of an x, and by means of a chisel and engine bur remove the bone lining the pus cavity; also amputate a small portion of the root. Render root perfectly smooth before closing cavity, which, if necessary, I would do by means of two stitches taken cross-wise.

*W. C. Davis, D.D.S., Lincoln, Nebraska.*

There is evidently necrosis of the alveola process. I should open freely through the gum, syringe thoroughly with peroxid of hydrogen, followed

with aromatic sulfuric acid. Even if there should be no necrosis the above treatment is recommended. Carbolic acid is valueless in a case of this kind.

*E. P. Beadles, Danville, Virginia.*

It is evident some irritant causes persistence of abscess. I would suspect necrosis of alveola plate, or a roughened condition of apex of root. If the former, remove necrosed bone; if the latter, fill root and amputate apex, taking care to make the end of root and surroundings smooth. Treat externally if further treatment is required.

*E. P. Mossman, D.D.S., Portland, Oregon.*

Presuming that the root canal has been thoroughly disinfected and properly filled, and the crown is in fair condition, I would suggest that an opening be made through the palatal surface direct to the abscess cavity, so as to secure free drainage. Polish end off root, remove necrosed bone, keep drainage open, and syringe daily with listerin, or some other disinfectant.

*J. A. Collier, Oxford, Kansas.*

The question does not state the location of fistula, but presuming the usual point over the roots to be its location, I would syringe out canal sack and fistula thoroughly with 20 per cent solution of listerin, followed with peroxid of hydrogen, then dry canal with hot air and fill with gutta-percha, using large instruments, forcing to the end of root and a little beyond rather than fail to entirely fill to apex.

The location of fistula permitting, I would take a large round bur in engine, or a spoon excavator, and remove all rough or uneven bone in the cavity formed by the pus.

Smooth the end of root, ligate tooth if not firm, syringe pus cavity, and fill loosely with cotton saturated with listerin. At a subsequent visit examine again for rough or dead bone, syringe with peroxid of hydrogen, and continue this treatment till there is no effervescing. Reduce the amount of cotton each time till the cavity is filled by granulation, which it will do if these directions are followed, and the membrane surrounding the tooth is alive; if dead, nothing can save the tooth.

*T. W. Oderdonk, New York.*

**Question 126.** *What is the best way to cut off a tooth having a living pulp, preparatory to attaching a bridge?*

I never cut off a sound, healthy tooth for bridge or anything else.

*J. Ruffin Osborne, Shelby, N. C.*

I do not approve of the destruction of living pulps for the purpose mentioned, preferring other means of support. But if thought advisable, would administer gas and use the excising forceps. *T. W. Oderdonk.*

If this question means to cut off the tooth with the least pain, I should say first drill into pulp and punch with a smoothly trimmed piece of orange wood. This destroys the pulp sufficiently to amputate tooth, without pain, in the usual way.

*E. P. Beadles.*

Devitalize nerve, then with suitable file or disk cut groove around the tooth at the point you wish to take off the crown, and with alveola incising forceps, placed in grooves, give a firm pressure and a quick side wrench. The crown will come off smoothly.

*J. A. Collier.*

Destroy pulp with nerve devitalizing fiber, or use a 10 per cent solution of cocaine with hypodermic syringe; wash out with Pond's extract and fill root. It can then be cut off without pain.

William F. Schwaner.

After marking the tooth deep as possible without causing pain, anesthetize—local or general—and excise, removing pulp, and filling at once.

A. L. Whitney.

Cut a groove around the tooth at neck and use excising forceps. Apply cocaine to nerve, and it can be removed with but slight pain. If you wish to use the whole tooth, dress down with disks and carborundum wheels.

A. A. K.

Methods of cutting off devitalized teeth have been so thoroughly discussed I understand this as a question of sensibility. Cut to desired form nearly as will be borne by patient, using cocaine and sharp instruments. Invest tooth in gutta-percha for a day or two, and, if desired, mold a little band beneath the gum to separate it from the tooth, finishing or repeating the process next time.

F. K. Heazelton, D.D.S.

If time will permit, devitalize; if not, prepare a hard wood point that will fit the pulp canal, dip in carbolic acid and place this with a mallet at hand. With a thin carborundum stone cut a deep groove in labial and lingual surface of tooth, and with excising forceps snip off the crown. Place finger of left hand quickly over the stub to exclude air; with the other hand pick up mallet, after placing the wooden point quickly to the exposed pulp, with a sharp blow of mallet drive to the apex; give it a turn and remove.

E. P. Mossman, D.D.S.

Apply rubber-dam. Tap the tooth at a point most convenient for the removal of pulp. When tooth shows signs of sensitiveness apply the spray of ethel chlorid, repeating as often as necessary. When the pulp is exposed, thoroughly freeze with the spray, and remove by passing a broach to apex of root, and by a rotary motion amputate while drawing pulp, much as a glove finger is turned wrong side out—the point at apex coming out first. If preferred a wooden point may be used after the application of ethel chlorid.

W. C. Davis, D.D.S.

**Question 127.** *A child, four years of age, has four temporary molars badly decayed and aching. Parents, indifferent as to extraction, only insist on immediate relief. Two pulps are dead, others nearly or quite exposed, and child fully instructed as to the terrors of the dental chair. What is best treatment under the circumstances?*

I would not extract teeth at that age if retention does not endanger health.

J. R. Osborne.

Gain the confidence of child and use palliative measures. Cap nerves not diseased, otherwise devitalize and open into freely. The teeth should not be removed at that age.

A. L. Whitney.

In the dead teeth open thoroughly and apply a dressing of oil of cassia and aristol, or campho-phenique. For the other two, stop aching, clean well as possible and use a dressing of thymol crystals, carefully protected

with gutta-percha. I think the most important thing is to relieve the pain and gain the confidence of child, and there will be no trouble to urge a return for further treatment.

*A. A. K.*

If the dead teeth are badly abscessed and relief cannot be obtained by opening into pulp chamber, I should extract. Expose pulps in live teeth and apply usual remedies. After all has been tried without relief, should extract. Circumstances must guide in these cases. They are generally difficult to manage.

*E. P. Beadles.*

Extract the two dead teeth, and, if possible, preserve the other two. Reason with the child. I think you will find it as susceptible to reason in a dental operation as its parents. By gaining its confidence and gentle handling dispel the "instructed terrors of the dental chair."

*J. A. Collier.*

Drill into pulp cavity of dead teeth or enlarge any existing opening of the escape of gas, and apply toothache remedies to those with live pulps. I would do nothing to cause pain during the first visit. Obtain the child's confidence, treat as other teeth, and fill with cement.

*Wm. F. Schwaner.*

If painfully abscessed, extract; if not, relieve pain by mild treatment and gain confidence of child at first visit. Later, cover with filling of gutta-percha or destroy vital pulps as you reason best, making all comfortable in the usual way; extracting, if they give annoyance later on.

*F. K. Heazelton, D.D.S.*

Very unfortunate that the child has been alarmed regarding the dental chair. Obtain his confidence, if possible, and make applications to soothe living pulps. Open and clean pulpless teeth. Further treatment depends on results. If you can control the child the teeth can be treated and saved; if not successful, give an anesthetic and extract.

*E. P. Mossman, D.D.S.*

I never like to extract temporary teeth at that early age—preferring to open up the cavities with dead pulps, disinfect thoroughly and fill with amalgam, taking care not to close the roots. Drill small holes in buccal side for the escape of gas. In those with exposed pulps place a small amount of oxid of zinc, wet with carbolic acid, over the exposures and fill cavity with cement.

*T. W. Oderdonk.*

Remove all debris from cavities of dead teeth, and, after peridental inflammation subsides, treat as in any other case of dead teeth. For those exposed try capping with oxid of zinc mixed with oil of caryophyllin. Fill with cement. If this is not permissible devitalize pulps and fill as in ordinary cases. Would not extract these teeth, as irregularities are sure to be the consequence.

*W. C. Davis, D.D.S.*

[In filling these temporary teeth allow no filling material to enter the roots.—ED.]

## EDITORIAL.

### WORKING OXYPHOSPHATE.

In working this cement the result varies much with the character of the manipulation. As much depends on the skill of the operator as on the quality of the materials. A gentleman complained recently of his cement not working well, and returned it for exchange. We mixed a sample of it soft, medium and stiff, but it would not discover to us the defects complained of. We took it to another dentist, and he, like the one sending it, could do nothing satisfactory with it. It crumbled, and when it did not crumble it would not harden. We asked another gentleman and his wife, both dentists, to try it. Immediately it responded to their wishes as a thing of life. Why this difference? The first and the last showed discretion, the second indiscretion. How? The second placed a small quantity of the fluid into a large quantity of the powder, and mixed it bunglingly. The result was a flaky, incoherent mass. When given the reason, he went to the other extreme and poured a large quantity of the fluid into a small quantity of the powder, and mixed them loosely to a thin cream. This did not harden at all. The mixings made by the gentleman and his wife were something like this: About a sufficient quantity of the powder—a little too much rather than not enough—was placed on the slab, and near it, as much of the fluid as experience had taught was sufficient to make a thick cream. The powder was gradually drawn into it and well mixed by the spatula till the desired consistency was obtained. A medium mix was made in the same way, except that less fluid was used. The stiff mix was made with a more rapid, thorough and severe manipulation, and then rolled between the thumb and forefinger. In five minutes the stiff mix was sufficiently set for thin shavings to be cut from it; in about three minutes more the medium mix was in the same condition. In a little over ten minutes the cream mix could be shaved. The thin mix is what is used in bridge-work, setting crowns, and

for nearly filling large cavities, to be finished with gold or alloy. The alloy is previously made plastic, with mercury, and, immediately the cavity is nearly filled with oxiphosphate, small bits of alloy are imbedded all over its surface. If gold is used this is embedded in the same way. When the cement is sufficiently set, more metal is worked on till well plated as a finish. Sometimes, instead of the foil, a thin plate of gold, shaped to the surface of the cavity, covers the cement. This is easily made fast with a small piece soldered on the under side. In filling a large cavity entirely with oxiphosphate, the mix is generally made as stiff as putty, though a thick cream is preferable for the body of the cavity because it sticks tenaciously to the walls; the cavity is then finished with a stiff mix because it wears better. It will wear still longer if the surface, before it becomes wet, is rubbed with paraffin from a hot spatula.

We do not say the cause of failure is always in bad mixing. The materials are sometimes poor. We have been chagrined at our own mistakes in their manufacture. Sometimes it was because our powder was not properly calcined, and sometimes because the fluid was poor. But it is now a long time since we have had trouble with either.

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"Do you not find it profitable to finish up your rubber plates better than that?" we said to a dentist the other day, after he had shown us one he had just finished.

"Oh," he replied, "the price of rubber work is so low dentists cannot afford to put much work on it."

"But," we ventured to add, "it would cost but little to varnish the model and press on it tin foil, rubbing it down smoothly. This would give the palatal surface of your plate a nice finish."

"Yes, but it all takes time, and you know time is money."

"And then," we continued, "this inside surface is not smooth. It is full of scratches and inequalities. Suppose your model plate had been made of nearly equal thickness, and you had covered what represents its surface in the plaster with thick tin foil, and bur-

nished it down smoothly, quite up to the back of the teeth, then your plate would have come out of the vulcanizer all ready for your cork and rouge."

"Oh, yes," he replied, "but such work is easier described than done. I have heard of it, but never had the patience to put it into practice."

"Why," we continued, hoping to shame him into doing better work, "your cheap John around the corner makes a better looking job than you do."

"That's so," he replied; "and how he does it for five dollars, when I grumble at ten, I cannot comprehend, and I must admit his fit nicely, too, while I am having trouble with mine all the time, though, of course, I do not acknowledge all this out loud. I would let him do all my laboratory work if I could do it without it being known. I hate the dirty, vexatious work any way, and I must say I am not an expert in it."

We could but add, "A man is not generally an expert at what he dislikes." This he also acknowledged, but he was beyond improving, and we left him where he was found.

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#### THE RUSH TO OUR COLLEGES.

What becomes of the multitude of students, who enter our dental colleges year after year? And for that matter, of the perfect rush to our medical colleges? And our theological schools and law schools, and schools of technics? How they pour into them. What becomes of them?

As well might we ask what becomes of the innumerable fish-eggs. A multitude of these embryo professional gentlemen, before they become even eggs, drop out; and many more who progress into an eggs-istence, never hatch; of those who do, very many break their shells, only to peep for one brief day and die. Others, who do not die, wish they had, for as long as they fail to die they fail to prosper, and one after another keep dropping out from sheer exhaustion; and those who do not exhaust, do worse, for they are

weaklings or a nuisance. It is only the few who become shining lights.

If those who are over this business of generation and incubation, and the final rearing of the young goslings, acted more wisely, and did not let them loose till they had their pin feathers, there would be less loss.

But this waste of material is everywhere, and yet everywhere there is enough. Nature is profuse in her supply and critical in her demands. In supplying all departments of business we imitate Nature in ourselves. We plant more seed than we expect will bring forth good fruit, and we send more boys to college than we expect will make good dentists and doctors and preachers. If all the embryo became eggs, we should have no room for the eggs. If all the eggs hatched, we should have no room for the progeny. The spawn is wasted, the eggs are eaten, the young are crushed, the weak are overcome, the ignorant are superseded, the blundering are starved, while the strong and wise and skilful take their places.

This is generally the survival of the fittest, but it is often the success of the shrewdest and sometimes of the unscrupulous.

These large incubators are often poor places to start life. Better go back to the good old days of private nests in the homes of laboratories. It is time enough to send our striplings away from home when they can walk alone. And when we do send them to these hot-houses, they should be kept there till better matured than they are now, before turning them out to pick their own living.

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There seems to be still a difference of opinion with regard to our relations to the medical profession. It seems to us if we went straight on our course, deserving the dignity of a learned profession, it would be much better than so frequently stepping aside to bow to our medical brethren as our seniors and superiors, and seeking shelter under their professional robe. It is what we make of ourselves that gives us professional standing.

## THAT PRELIMINARY EDUCATION.

During the discussion in England of the necessity of prohibiting American dentists from practicing in England, much stress was laid on "the defect of our preliminary education" required by our colleges. Some have become quite curious to know what is the English preliminary examination that it should be so superior to ours. There must be something "dreadfully important" in it to cause our English brethren to make this a test of the difference in the standard of recognition, and cause the throwing out of even the diplomas of the Michigan University and of Harvard. Here it is, as given in a leading editorial of the *Dental Record*, London. Let us ponder it seriously, that we may ourselves come up to this lofty standard in our dental schools: "As to this test, what does it really amount to? Simply this. That any boy of average capacity kept at school for the ordinary period, say till he is sixteen years of age, is able to pass the test with little effort. The whole reason for such a test is to insure this preliminary education."

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On another page Prof. North gives us a brief account of the usual view taken on the nature of inflammation. Because we differ from it in part is of small consequence. Yet there are two or three points we would like to mention briefly, though we have stated them before.

1st. The Professor says, "Four cardinal symptoms of inflammation are well recognized—redness, swelling, pain and heat, with impaired function." Such a definition has many exceptions. Inflammation of the bone produces no swelling, and it is generally without redness. In chronic inflammation of the other tissues there is often neither pain nor heat, and there may be no redness, and there may be either without the other.

2d. Friend North says, "The redness is caused by an increased flow of blood to the part." We believe it can be demonstrated that there is no increased flow of blood to the part, and that the redness is from a partial obstruction of the flow.

3d. "The heat comes from an excessive flow of the blood through the part." No, there is no excessive flow of blood through the part. The heat is caused by the struggle and force of the blood to pass through the inflamed area.

4th. "The flow of blood through the dilated channels is more rapid at first." The flow of blood is retarded at first by the collapse of the blood-vessels, and then by the disorganization of the blood, the corpuscles or fibrin becoming deposited on the walls of the channels. This obstruction and the force of the blood to overcome it are so great that the circulation through the part becomes anastomosed. This pressure brought against the walls of the nerves is the cause of the pain.

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#### URIC ACID.

A chief province of the liver is to produce urea that reduces albumen and other nitrogenous food to the uses of nutrition. After accomplishing its purpose it is thrown off through the kidneys. During this process urea is sometimes changed to uric acid, and we have what is called an uric acid diathesis. It may then give rise to many pathological conditions. Thus, uric acid uniting with the phosphate of soda and potash of the blood produces urate of soda. This, as an ingredient of the blood passing through a joint, may become lodged, causing the severe pains called gout. If it accumulates in the urinary organs, it produces stones. Uric acid attacking the teeth, as an exudation from the mucous membrane, dissolves the lime, resulting in erosion; or, if through the circulation of the teeth, the brittle, crumbly condition called white decay.

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It will not do to appear too self-confident and infallible. It looks too much like a mask put on to hide weakness and incapacity; neither will it do to express frequent doubts and fears. To distrust oneself is to court the distrust of our patients. A prompt,

manly, straightforward course is quite sufficient to show we know what we are about; that will win confidence, though all men know all men to be fallible. Yet, where results are necessarily in doubt, we should show hesitancy and express our honest conviction. "Why did you not tell me I might have trouble?" from a returning patient, is always embarrassing, and sometimes uncompromising.

---

Well, we have come to the end of the fifteenth volume of our ITEMS OF INTEREST, and a successful year it has been to us. Our subscription list has largely increased, and, of course, our influence for doing good has increased proportionately. We have never tried harder to make our magazine interesting and profitable to our readers, and never received more evidences that we have succeeded. The improvements we have made have almost doubled its cost, but the results have justified the expenditures. If there is any dental journal whose publishers doubt our leading them in circulation, we would like to compare our paid list of subscriptions with theirs; or, perhaps, the postmaster would give the needed information. If there is not a willingness to submit to stern facts, let us no longer see in the "annual announcement" of any which may have led in the past, that they still lead.

But while we are receiving recognition for doing good by producing a succinct summary of dental news and improvements, and keeping in warm contact with the masses of the profession, we do not ignore the good done by other journals that record more elaborate essays and report more at length the proceedings of dental gatherings. Yet, while such journals will please those who have time for extensive reading, the majority of dentists have neither time nor inclination to pursue such details and such exhaustive treatises. It would be a fine thing for every dentist to take such a magazine, and study some of these elaborate productions as a discipline and a study. But most prefer to have the more essential facts in short, pithy articles and items.

## NOTES.

Sodium peroxid is asserting its superiority as a bleaching agent for discolored teeth.

\* \* \*

Dr. Sims says he finds better retaining pits in the non-adhesive gold than by drilling little holes in tooth substance.

\* \* \*

A specialist is often extravagant in his statements. We believe Dr. Talbot is, when in the discussion of Dr. Annie Reynold's paper, in the Columbian Congress, he states that 50 per cent of all children have neurotic disease.

\* \* \*

There are few dentists who would not be benefited by taking *Power and Transmission*, a journal devoted to manufactures, science, arts and invention. Price, \$1.00. If you do no more, at least send for a sample copy. Published at Mishawaka, Indiana.

\* \* \*

The *Cosmos* deserves high credit for its exhaustive and excellent daily reports of the Columbian Dental Congress. The *Dental Review* and the *Dental Tribune* also did well. The succeeding monthly number of the *Cosmos* contained 500 pages. The *Dental Review* also makes quite a book.

\* \* \*

Dr. John Wood, of Brooklyn, sends us a unique spoon, made of bone, which he thus describes: "This spoon is very useful as an amalgam-carrier, acting as a tongue-depressor at the same time, or a cheek-distendor, if needs be. Its convex surface makes it invaluable as a cheek-distendor when using a corundum or other disk in crown-work. The many other uses it can be put to are numerous. The small sum of four cents puts it within reach of any dentist."

\* \* \*

Dr. E. Parmly Brown, of New York, recently extracted an incisor, with a root the shape of a fish hook, from the nose of a patient, thirty-five years of age. It first made its appearance five years previously, and at the time of the operation nearly filled the left nostril, growing upward instead of downward, and was plainly in sight. To make the extraction from such a difficult position painless he used a local anesthetic with remarkable success. The malposition of the tooth might have been owing to the fact that the patient had cleft palate and hair lip.

## FOR OUR PATIENTS.

It is easy enough to be pleasant  
When life flows by like a song,  
But the man worth while is one who will smile  
When everything goes dead wrong ;  
For the test of the heart is trouble,  
And it always comes with the years,  
And the smile that is worth the praises of earth,  
Is the smile that shines through tears.

*Ella Wheeler Wilcox.*

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### BUGS.\*

[Reflections after hearing Smith, Taft, Wright and others talk on "bugs," at Columbus, O., State Dental Association, in 1891.]

am somthin' of a vet'ran, jest a turnin' sixty year—  
A man that's hale an' hearty an' a stranger tew all fear ;  
But I heard somthin' here last year that made my old head spin,  
An' I'm goin' tew ease my conshuns now if I never speak agin !

I've lived my three-score years of life, an' never till that day  
Waz I tuken fer a jackass or an ign'rant kind o' jay,  
Tew be stuffed with sech durned nonsense 'bout them crawlin' bugs an' worms  
That's a killin' human bein's with their "Mikroscopic germs."

They say there's "Mikrobes" all about a lookin' fer their prey—  
There's nothin' pure tew eat nor drink an' no safe place tew stay.  
There's "Miasy" in the dew-fall, an' "Malary" in the sun—  
'Tain't safe tew be out doors at noon, nor when the day is done.

There's "Bactery" in the water an' "Trikeeny" in the meat—  
"Ameely" in the atmosphere, "Calory" in the heat ;  
There's "Corpussuls" an' "Pigments" in a human bein's blood—  
An' every kind o' thing existin' sence the flood.

Them bugs is all about us, jest waitin' fer a chance  
Tew navigate our vitals an' tew 'naw us off like plants ;  
There's men that spends a life-time huntin' worms, jest like a goose—  
An' tackin' Latin names to 'em an' lettin' on 'em loose.

Now, I don't believe sech nonsense, an' I'm not agoin' tew try—  
If things has come tew sech a pass I'm satisfied tew die ;  
I'll go hang me in the sullar, fer I won't be sech a fool  
As to wait till I'm pizened by an "Annymallycool!"

*Ohio Journal.*

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\* Read by request, by D. R. Jennings, D.D.S., at Ohio State Dental Society, December, 1892.

## MEDICAL TEMPERANCE ASSOCIATION.

This society, organized at the Washington meeting of the American Medical Association, has manifested a vigor and strength that promises to have a very large influence in the future. Founded on the same essential platform as the English society, which has been in existence seventeen years, it aims to rouse and foster scientific study of the alcoholic question.

The English society numbers several hundred members, who yearly contribute many papers and studies of statistics concerning alcohol and its value as a medicine, and other branches of the same topic. Dr. B. W. Richardson is President, and a journal is issued as an organ of this society, the members of which now include some of the most distinguished medical men of Great Britain. Several branches are in active operation, holding meetings monthly and quarterly, and sending delegates to the annual meeting, which convenes at the same time and place as the British Medical Association. The American society is presided over by Dr. N. S. Davis, and has already over a hundred members. The annual meeting will be at Milwaukee, June 8th (as the members all belong to the American Medical Association), and will, no doubt, attract much attention. In this country, where temperance and the alcoholic question occupy so large a part of the sociological and political topics of the hour, it seems eminently proper for physicians to study and teach the public on this subject. Of all others medical men are the most competent and have the best facilities for sound counsel in this field. Yet, to-day, almost the entire literature, together with the leaders and teachers of the uses and abuses from alcohol, are a confused medley of statements by the most incompetent persons. It seems startling that the alcoholic question should receive so little attention from physicians, when it is literally a scientific subject which can only be known and understood by the methods of science. This society has begun on this basis. Two prizes of a hundred dollars each are to be awarded to the best essays "On Alcohol as a Medicine," also on "The Physiological Action of Alcohol on the Body," at the coming meeting. A committee on statistics of the mortality from alcohol will report on the year's work. Several papers will be read on medical phases of this subject at the coming meeting. This society ignores all political or moral discussions of temperance, and seeks to study the subject from the scientific side. Every medical man in the country should be interested in this work, for, notwithstanding all

that has been written, the subject is practically unknown, and will be till it is studied generally by physicians.

We take pleasure in calling attention to this society and its work, and believe that as long as they confine their studies exclusively to the scientific side of the alcoholic question, they will fill a very important place in the progress of medicine. The English society, on the same basis, has been very influential in pointing out facts and conclusions concerning alcohol and its influence not known before; and we have no doubt that this society will be equally influential, and attain high rank in the years to come. All persons who are interested should write the Secretary, Dr. Crothers, of Hartford, Conn., for transactions of last meeting and programs of the coming session.

*Am. Med. Ass'n Journal.*

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#### "WHERE IGNORANCE IS BLISS," ETC.

A medical exchange recently contained an article on Extraction of Teeth, Filling, etc., written by an M.D., and urging his medical brethren to "try it." After describing his instruments and methods of extraction, he says:

"It will do but little good to fill a tooth of which a third is decayed, or one that is dead. An inflamed pulp or ulcerated fang should at once be drawn out.

"I keep on hand some amalgam, cement, and dental rubber. Then with an assortment of drills, burs, spoon excavators and nerve brooches (?) I can fill a tooth. I use arsenical paste for a sensitive pulp. With a barbed brooch I draw out an exposed nerve. When I find a small hole in an otherwise serviceable molar or bicuspid I plug it with amalgam; if large and sensitive, I use cement or rubber (?), also the same for front teeth. I never attempt to fill a dead tooth, or one that has been aching for some time.

"I care nothing for any sneers, as I have been at this method of filling for two years, and *it pays*. When my temporary filling comes out, or all soreness is gone, I can put in a permanent filling or send to a dentist. It takes but a short time, costs but little, pays big profit, and is cash."

And this is dentistry in *his* estimation. It suggests the thought that better dental legislation *is needed* in some of our States, and we hope to see the efforts of our dentists, to obtain such legislation, crowned with success.

*Ohio Journal.*

## WOULD WE BE SUCCESSFUL ?

Then the hidden springs of a true life must be set in motion, and made to flow in some definite direction, and receive our utmost attention. This must be *the* business of our life. It is generally the man of one absorbing employment who succeeds. With diffusiveness of interests and multitude of cares and complexity of life, we divide ourselves up till energy flags, resources fail, and we are left stranded by the wayside. A man who whiffles away his life on gewgaws and trifles, spending his money on follies, his time on nonsense, and his strength on evil habits, foolish associations, and enervating excitements, cannot succeed. These must give place to sobriety, thoughtfulness, and the exclusive care of a legitimate work. The qualities of a true business character, which this experience gives, will assure success.

All this need not be irksome or difficult. Hard work is not drudgery when the heart is in it, difficulties are not discouraging when hope sweetens labor, deprivations and isolation and humiliating circumstances are not dreaded when success is assured. It is the exhaustion of excesses that unfits us for the useful; it is our follies, and not hard work, that kills, or brings weaknesses and decrepitude and premature old age. Success is easy if we will avoid these and attend to our business.

---

The utilization of the well-known property of aluminum to lower the fusing point of iron is a very neat and clever application of a curious phenomenon.

Silver is the metal which seems most useful in improving aluminum.

Five per cent silver gives to aluminum elasticity, which is wanting in the pure metal, increases its hardness, and is capable of being polished, and does not injure its malleability, or much increase the weight.

This alloy is excellent for handpieces and handles of instruments. It is about as hard as coin silver, and is not affected by sulphuretted hydrogen; hence it does not easily tarnish.

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Ammoniate your gold when you want it non-cohesive; by annealing, it becomes cohesive again. Heat will drive off any gaseous matters from the surface of gold.

*Dental Review.*

1893.

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## The Great “Columbian” Year.

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### AN APPEAL TO THE PROFESSION.

**N**O doubt the great International Dental Congress, which will take place in Chicago during the progress of the World's Fair, will form one of the most memorable epochs in the history of dental science and art.

No doubt the progress of the dental profession, its precious conquests, and its still greater aspirations, will be presented there by the ablest exponents it has produced.

The greatest achievements will be heralded with joy, and carried by the press to the remotest parts of the civilized globe where dentists pursue their noble profession, to be reechoed by grateful practitioners, who are the agents through whom mankind receives the final benefits of all the newest inventions and methods.

Errors will be forgiven, failures forgotten, so far as practice is concerned, and bigotry and unscientific opposition to progress on the part of misguided contemporaries will be consigned to oblivion, not to be touched again to mar the feast of the really good, the most useful and the true—those indelible blessings and steadfast accompaniments of an ever progressing humanity.

But the direct mediums which have nursed and encouraged everything which tended to enhance the progress of the profession, which were the means to lift the profession to its present high position, and which have still greater promises in the future—we mean the dental societies, and especially the dental magazines—will have reason to congratulate themselves on their share in the results achieved. For nothing mirrors so well the state of any body of workers in those rich fields of science and art as the magazine.

We make bold to say that the progress of our magazine, for instance, is as much of a wonder as the progress of the profession itself during the past two decades.

The same may be said in behalf of some other of our esteemed contemporaries, for, while nothing worth knowing has ever been gained in any department of either science or art without pains-taking effort or a spirit of enterprise often demanding the greatest sacrifices, successful journalism has won its distinction by making those qualities a permanent feature of its marvelous growth and subsequent influence.

The ITEMS OF INTEREST is now entering on the fifteenth year of its existence. Looking backward, so to speak, when it was a small dental newspaper, and now the most largely read magazine, introducing new features every year, illustrated now with the finest plates, can it be said that *it* was without its creditable share in the laborious process of evolution of one of the most beneficial professions?

While the great feature of the year in dental journalistic circles will be the reports of the proceedings of the above Congress, which will be reproduced by the ITEMS, as well as by the rest of representative dental monthlies, we are anticipating that period by introducing in the meantime such features as are worthy precursors of that great epoch.

We have been always conducting our magazine on the lines of progress, and in announcing our new departure for the great "Columbian" year of 1893, we are aware that we serve not only the cause of progressive and enlightened dental journalism, but we

also present something which is, as well, a departure in dental science and art.

We refer to the introduction in this issue of chromo-lithographic plates, illustrating the diseases of the mouth, both surgical and non-surgical, in *natural colorings* painted from actual cases.

There will be in all about fifty illustrations presented in this magazine during the year, the articles being from the pen of W. F. Rehfuss, D.D.S., author of "Dental Jurisprudence"—a book, by the way, opening a new epoch in the dental profession,—and L. Brinkmann, M.D. No expense having been spared to make these illustrations as nearly perfect as the state of modern art permits.

The authors, as well as the publishers, naturally hope that this new contribution to dental science will be welcomed by the profession, scattered now in almost every nook and corner of the civilized portion of the globe, especially when the low price of a year's subscription to that foremost dental magazine can place it within the reach of every English reading dentist in the world.

The above is only one of the many features which will distinguish our magazine from our esteemed contemporaries. We will, of course, continue to publish several other original contributions on topics of the day by well-known authorities, and our invariable motto—conciseness—will still hold sway. From our excellent contemporaries we will select only the most intrinsically valuable.

We also desire to call the attention of the profession to another important original feature of the **ITEMS OF INTEREST**. It will contain a monthly summary of the progress of dental art and science, consisting of condensed translations and reviews of original contributions by the most celebrated lights of the profession in Europe, from German, French, Russian, Spanish and Italian sources, thus acquainting our English reading subscribers with all the new methods in theory and practice which are of vital interest to every practitioner.

But, above all, in appealing to every English reading dentist to become its regular patron, and by this receive a complete account of the contemporaneous progress of the science and art of den-

tistry in short, instructive articles, we wish to point out the able editorials which have done their share in spreading the light further, in raising the profession to its proper place, and thus also in raising the dignity of each individual votary of that noblest and most beneficial profession to whose progress mankind owes so much.

Being aware that the majority of our readers are interested in perusing our advertisement pages, which we keep for the use of leading houses and reputable dealers presenting their respective specialties, as well as the different dental colleges, etc., we will further endeavor to make them as attractive as possible, while reserving our independence of criticism. We know that dentists are artistic in their tastes, and we refer to the general make-up of our magazine, and especially to its advertising pages, as illustrating our appreciation of that high characteristic of their class.

And now, notwithstanding the great extra expense incurred in furnishing the chromo-lithographic plates, etc., we desire to announce that the exceptional feature of the ITEMS OF INTEREST as being the best, and at the same time the lowest priced dental magazine in the world, will be preserved, so that the subscription price will still be only \$1.00 per year.

But it must not be forgotten that it is only by having thousands of regular subscribers, that we can afford to publish it at that low figure. We must, therefore, advise those who receive this sample copy of the ITEMS OF INTEREST to send in their subscriptions as soon as possible, as we do not carry on our lists any but regular subscribers.

We hope that every dentist and student will appreciate the value of our efforts on behalf of the profession, and will give us that sign of encouragement which so many thousands of their fraternity have already expressed, by the usual sign of a prompt remittance of the modest price of a yearly subscription.

We have no doubt that our numerous friends will promptly renew their long-continued subscriptions, and as to the dentists and students who wish to share the benefits of the enlightening

companionship of a first-class, progressive dental magazine, we say this:

Doctor, if you are interested in the progress of your profession, if you want to be abreast with the times, insure yourself the receipt of the ITEMS OF INTEREST, which will bring you every month in the year the newest methods of treatment, the most advanced theories, and many of those helpful suggestions and hints from *all* sources, which are so essential to the success of every practitioner.

If you take two dental magazines, the ITEMS OF INTEREST *must* be one of them; and if only one, the ITEMS OF INTEREST, having the largest circulation of any dental magazine in the world, being thus the most popular, and consequently the lowest priced of all, will no doubt be *the* one you care to take.

*You cannot well afford to be without it!*

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## TO OUR SUBSCRIBERS.

**I**N view of the increase in our regular subscription list, and the great expense incurred in the preparation of the ITEMS OF INTEREST for 1893, we must request all those who have not yet renewed their subscriptions to attend to it at once, as *we will positively discontinue sending our magazine*, after this number, to any but those who *have paid their subscription* for the coming year.

We hope that the profession will appreciate our liberality in this respect in the past, and will concede us the right to protect ourselves against further unnecessary expense of mailing our magazine to such practitioners who, though evidently interested in its contents, fail, for some reason or another, to come up in time with the very modest subscription price.

This being the season for new resolves, may the New Year and the new ITEMS suggest to our friends their plain duty in the premises, so that they may not be deprived of the enlightening and cheering companionship of the bright monthly reminder of the world's dental thought and practice, on which the success of every conscientious practitioner depends so much.

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*December 24th, 1892.*

**Publishers.**

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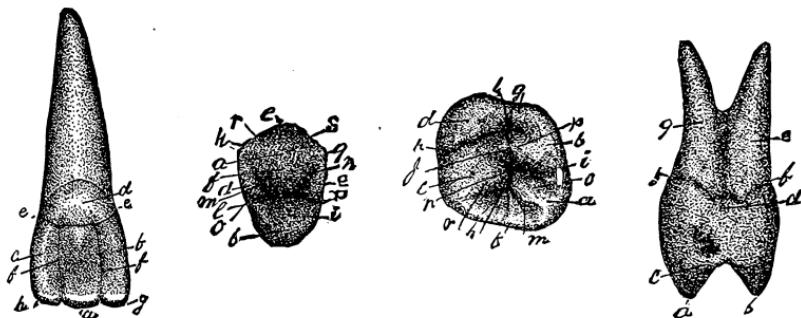
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##### Dental Review:

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Dental Cosmos :

"The book is well printed, and should find a ready acceptance by the dental profession."

Dominion Dental Journal :

"It is an *omnium gatherum* of practical use after the manner of Dr. Catching's Compendium."

International Dental Journal :

"For the service this book is intended to perform it is well prepared, and will, no doubt, be of great value."

Dental Practitioner :

"The Wilmington Dental M'f'g Co. is fast assuming an important place among the publishers of dental books."

Dr. T. B. Welch, ITEMS OF INTEREST :

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We here give some additional extracts from reviews:

### DENTAL COSMOS:

"We consider this volume to be a distinctly valuable and novel addition to dental literature."

### INTERNATIONAL DENTAL JOURNAL:

"The author is to be congratulated that in this new field of labor he has been able to add something of positive value to the needs of his profession."

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---

Coming from a master of the art and learned student of dental science this book has filled a want which no other work has ever attempted to fill distinctly. It has been a help both to student and teacher, and has created a demand which quickly exhausted the first edition, and a second one, thoroughly revised, enlarged and fully illustrated, has now been issued.

A feature of great value is the Appendix, containing a full description, with illustrations, of the celebrated "System of Appliances for Correcting Irregularities of the Teeth," by Dr. E. H. Angle, which is considered the simplest and best.

---

### What Dental Editors Say :

#### *Dental Cosmos :*

"The author of this little volume brings to his work a recognized competency which is a guarantee of the practical character of the instructions given. The considerable addition of illustrated examples of the Angle System of Regulation and Retention adds to the value of the book."

#### *Ohio Journal of Dental Science :*

"Dr. Haskell, as our readers know, has the faculty of expressing his thoughts concisely, and we do not know of a work, of 97 pages, that contains so much practical knowledge as this."

#### *Dental Office and Laboratory :*

"Books of this kind do an immense amount of good, for what is said, is said in as few words as possible, and to the point."

#### *Dental Practitioner :*

"This work is truly a practical book by a practical man."

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**Price, Bound in Cloth (post-paid).....\$1.50**

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**THE WILMINGTON DENTAL M'F'G CO., Publishers,**  
**1413 Filbert Street, Philadelphia, Pa.**

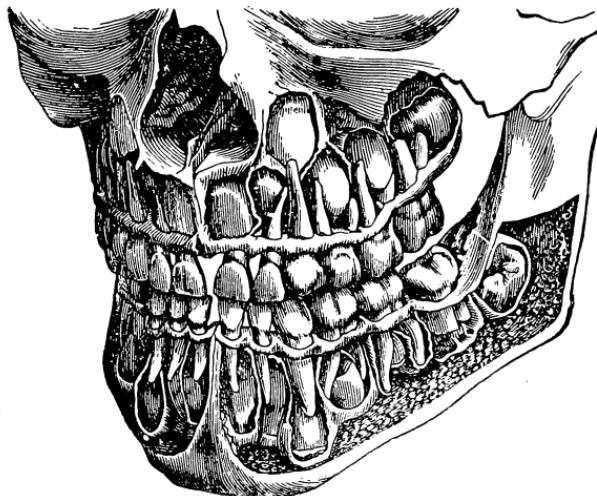
No Household Library Should be Without This !

# THE TEETH.

*Some Plain Facts Regarding the Teeth,*

With Suggestions Concerning their Character, etc., etc.

By T. B. WELCH, M.D.



DENTISTS have often found it indispensable in their large practice to place in the hands of their patients some such treatise that would enlighten them, in plain language, of the true nature and importance of the teeth, and how to take proper care against unnecessary decay, etc. This little book is just designed for such a purpose, and the gratuitous circulation of it by dentists among their patients, has proven what excellent results it can bring to both dentists and the families entrusting them with the care of their teeth. As the author well says, in stating its object:

"There has been an abundance of works written, adapted to the wants of the dental profession, but scarcely any intended for the general reader. This fact, undoubtedly, accounts to a great extent for the prevailing ignorance on this whole subject, and for the almost universal neglect of the teeth."

The following prices include your name and address on the cover page, preceded by the words "With Compliments of."

---

#### PRICES.

<b>One copy for sample.....</b>	<b>\$ .06</b>
<b>One hundred Copies.....</b>	<b>3.50</b>
<b>Five " "</b>	<b>15.00</b>
<b>One thousand " "</b>	<b>25.00</b>

The last three pages are devoted to the excellences of nitrous oxide gas ; if this is not desired, it is easily removed.

---

THE WILMINGTON DENTAL M'F'G CO., Publishers,  
1413 Filbert Street, Philadelphia, Pa.

# THE DIAGRAM

# Appointment Book.

TUESDAY.												
2 Mo.J.O												
8	Miss Frailey	1	P.W. Peck									
9		2	Edgar Thomas									
10	Bertie Doak	3										
11	Mrs Harmon	4	Paul Rose									
12		5										

The above is a fac-simile of one day's work in the "Diagram" Appointment Book ; the appointments are made as usual, and the fillings are accurately noted on the diagram. No ledger or other memorandum is necessary for immediate use ; at leisure the work may be copied into the large ledger, if desired. After each person's name a note may be made of the amount charged or paid. It will be seen that it is easy to keep a record on this diagram of the work of this day, or of any day, by letting the hour of appointment stand for that person in the diagram ; thus the figure 8 in the diagram stands for Miss Frailey, the 8 o'clock appointment.

**The "Diagram" Appointment Book** and Pocket Diary is a book suggested by practical dentists, and meets the wants of the profession. The "Diagram" Appointment Book is  $6\frac{3}{4} \times 4\frac{1}{4}$  inches. In the front it has calendars for three years, and a table to show the number of days from any day in one month to the same day in any other month. The new feature of the book combines with an appointment book a DIAGRAM for registering the work to be done, or to make memorandum of the work when finished, by having a diagram for each day, and the diagram in such shape as to be efficient and yet not make the book bulky and unhandy. There are one week's appointments on two opposite pages, and, therefore, six diagrams on same space. In the back of the book are pages for memoranda.

The book may be used without the diagrams and then is very similar to other appointment books. There can be no disappointment in the paper, ruling, printing or binding, as they are all first-class, in every particular.

## PRICES.

Bound in Cloth.....	50 cents.
" " Leather.....	75 "

# NO. 1 APPOINTMENT BOOK.

## MONDAY.

8		1	
9		2	
10		3	
11		4	
12		5	

## TUESDAY.

8		1	
9		2	
10		3	
11		4	
12		5	

## WEDNESDAY.

8		1	
9		2	
10		3	
11		4	
12		5	

Can be used for any Year and commencing at any time.

Fine Leather Cover, Good Paper, Memorandum and Cash Account.  
Calendar for Five Years.

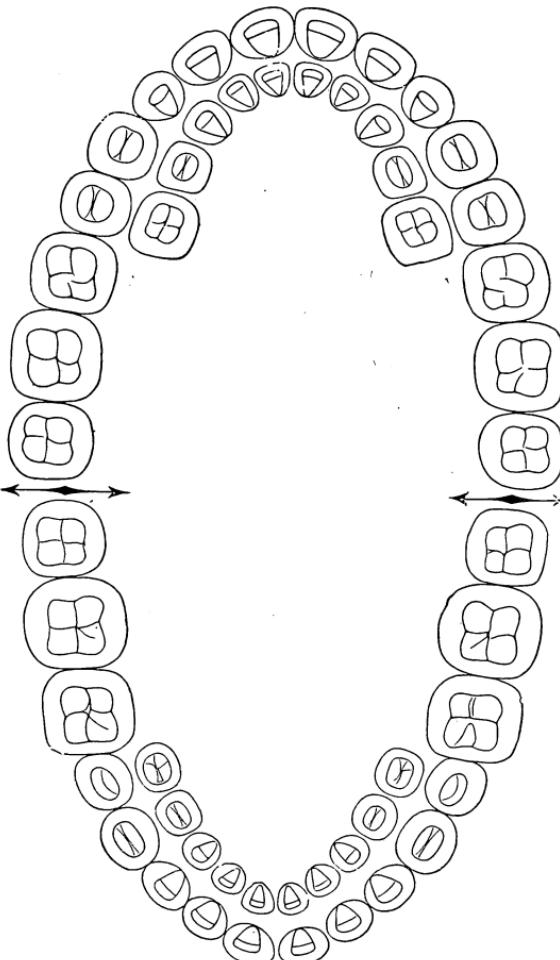
## PRICES.

Without Tuck..... 50 cents.  
With Tuck and Pocket..... 75 "

THE BOOK OF THE DAY!

YOU NEED IT EVERY DAY!

## ALLPORT'S \* DENTAL \* LEDGER.



DR. ALLPORT has designed this Ledger specially for the needs of the dental profession, and to this day it holds its own as being the simplest, yet most intelligible of any Ledger. A chart accompanies each account, and with proper marking will show the state of each mouth and the work that has been done. Each account is ruled for name and address, date, description of the different operations, charge for same, and credit for amounts paid. Each book is suitably indexed.

The paper is of the best quality, and the ruling, printing and binding are first-class.

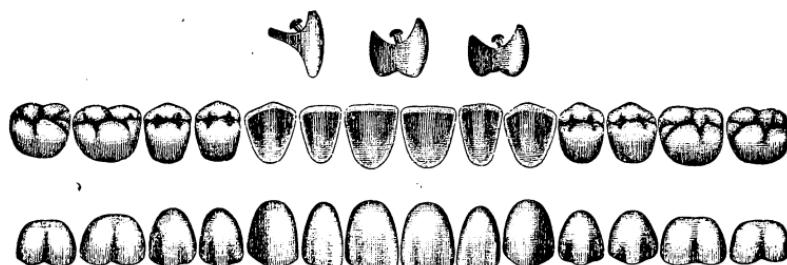
### PRICES.

<b>One account to a page, 300 pages, half Roan</b>	<b>\$2.00</b>
<b>Two accounts</b>	<b>" " 172 "</b>
<b>" " " " 340 "</b>	<b>" " 3.00</b>
<b>" " " " 340 "</b>	<b>half Turkey. 3.50</b>

We suggest the use of our Examination Tablets and No. 4 Bill Heads with this Ledger, making a complete outfit.

# CRESCENT TEETH.

Patented by Dr. E. A. FLOYD, in the United States, June 19th, 1888  
Canada, May 7th, 1889, Great Britain, June 4th, 1889.



In describing the advantages of the above teeth we have only to say that the inventor has used them almost exclusively for the last four years. He has found them to surpass any other form of tooth in the following points:

1. They present the natural shape and size of the tooth on the lingual surface, and are, consequently, more pleasant to the tongue.
2. They are made to set over the center of the alveolus. This position gives a more direct and equable pressure in eating than other forms of teeth.
3. In cases where the gum protrudes, making it impossible to insert gum teeth, these teeth can be easily and elegantly adapted to the case by setting them far back or under the ridge.
4. The pins of the teeth being set in the deep groove or bottom of the tooth, vibration or change of position is impossible when the person wearing them is eating.
5. The perfect fit and adaptation of these teeth to the plate, render it almost impossible to accumulate anything under the teeth.
6. In articulating or in adjusting a set of these teeth, the use of the grindstone is almost wholly unnecessary.
7. The bicuspids and molars all being "short bite," they can be used where a "long bite" tooth will not be at all available.
8. Before swaging, see that the pins are perfectly clean and perfectly set in each tooth.
9. As these teeth are open on the sides, a continuous mass or ridge of the plate material is so formed as to produce great and unusual strength at this point of attachment to the plate.
10. Should a tooth get broken from the plate, a new tooth can be replaced in a few minutes, without even marring the polished plate, by simply removing the broken tooth and boring a beveled hole from the inside of the plate down to the tooth; then insert a tooth of the proper form, size and color, and set the tooth in cement or amalgam.
11. These teeth are so constructed that they can bear a great heat, and can be used most advantageously in any case requiring an artificial tooth.
12. These teeth mounted on any of the rubbers, gold aluminum or platinum, with pink rubber gums, make a strong and beautiful piece of work.
13. Actual test of the Crescent Tooth has proved most satisfactory to the inventor, who has practiced dentistry for thirty-six years, and his patients and those who have used them; they are put upon the market with confidence in their integrity and practicability.

## SPECIAL DIRECTIONS

TO BE

## Used in Mounting Crescent Teeth.

---

When packing the Pink Rubber for the facings be careful to avoid letting the heads of the pins become imbedded (in Pink Rubber) as it lacks the strength of the other rubbers, in some cases teeth have loosened and pulled out of the plate where the pins were held by it.

In all cases be sure to pack around the pins the same rubber which is used for the palatine plates. In making a set of Crescent Teeth, don't cut out the rubber between the teeth, but leave it full, so as to look like the natural gums, and give strength in retaining the teeth in the plate.

Dentists are apt to let the six anterior teeth "strike" in articulating a set of artificial teeth, this should be avoided in all cases.

When the Crescent Teeth were first put on the market the pins were rather small; the pins are now treble in size and straight, making one of the strongest on the market. Many new moulds have been added, and the teeth can now be furnished of almost any size, shape or shade.

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## PRICES OF CRESCENT TEETH.

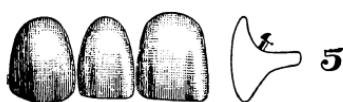
Less than \$10.00 lots, per tooth.....	12½ cents.
In \$10.00 lots, per tooth.....	12     "
" 25.00 "     "	11½     "
" 50.00 "     "	11     "
" 100.00 "     "	10     "

---

THE WILMINGTON DENTAL M'F'G CO.,

Philadelphia,     New York,     Chicago,     Washington,     Wilmington.  
II

# CRESCENT TEETH, IN SETS OF 14's. UPPER.



## LOWER.





# CRESCENT TEETH, BICUSPIDS AND MOLARS IN SETS OF 8's.

## UPPER.



11



12



13

## LOWER.



1



3



2



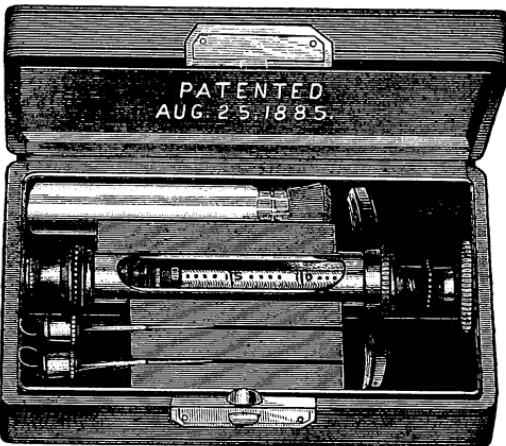
4



5



## HYPODERMIC SYRINGE, No. 2.



This is an unusually strong syringe; the case is fenestrated, the piston graduated, and the plunger may be tightened or loosened by simply drawing back the piston until the nut on top of the plunger engages in a slot in the casing, when turning to the left expands the plunger; all practitioners know the value of this device. The finger-rests are quite heavy, and will stand the strain upon them. The syringe can be used with either tablets or solutions. Furnished in a neat case with two short needles, reinforced.

Price.....\$3.00

### CHAMOIS SKIN PAD.

THE WILMINGTON DENTAL M'F'G CO.,  
1413 Filbert Street,  
PHILADELPHIA, PA.

NEW YORK. - - - CHICAGO.

### FOR PLACING GOLD CYLINDERS UPON WHEN OPERATING.

Made of fine chamois skins, specially prepared, with an extra soft lining giving the advantages of a piece of spunk, which it is designed to take the place. Its ready sale shows how well adapted this pad is to its use. It is neat in appearance, and put up in a box in which it can always be kept and protected from dust. Size,  $5\frac{1}{4}$  inches long, by  $4\frac{1}{8}$  inches wide.

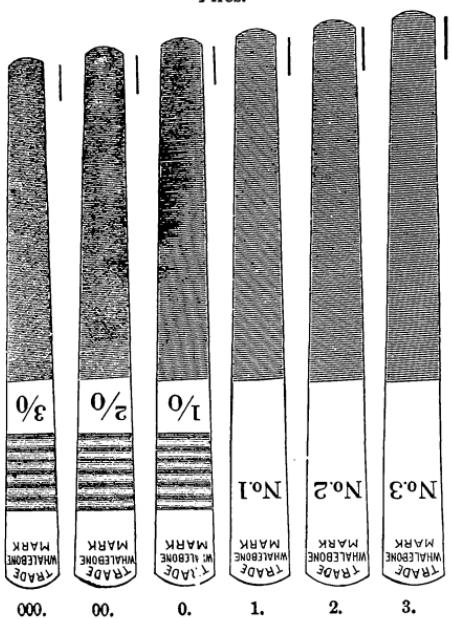
Price.....per pad, 25 cents.

# “WHALEBONE”

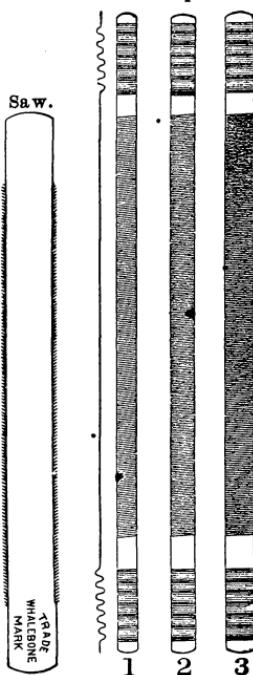
Separating Files and Saws, and

## Finishing Strips.

Files.



Strips.



So named on account of their flexibility, and because they are practically non-breakable.

In order to still more increase the use of this new brand of goods, we have decided to make another cut in the prices of our “WHALEBONE” SEPARATING FILES AND SAWS, AND FINISHING STRIPS.

Dentists who have used them have learned the value of these tough, flexible and almost non-breakable articles, and those who have not, ought to send us their next order for them, and thus get better satisfaction from their work.

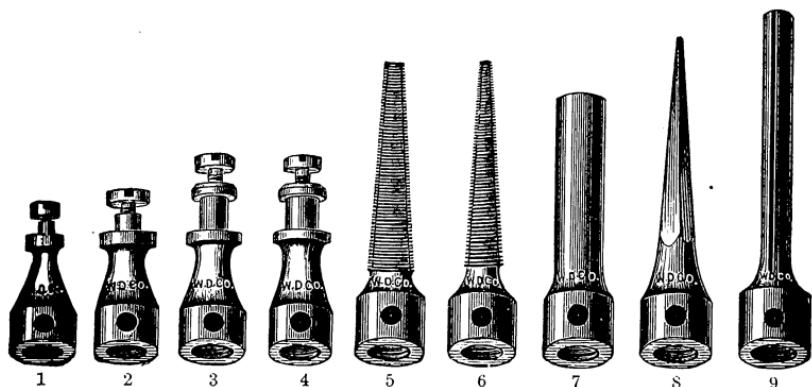
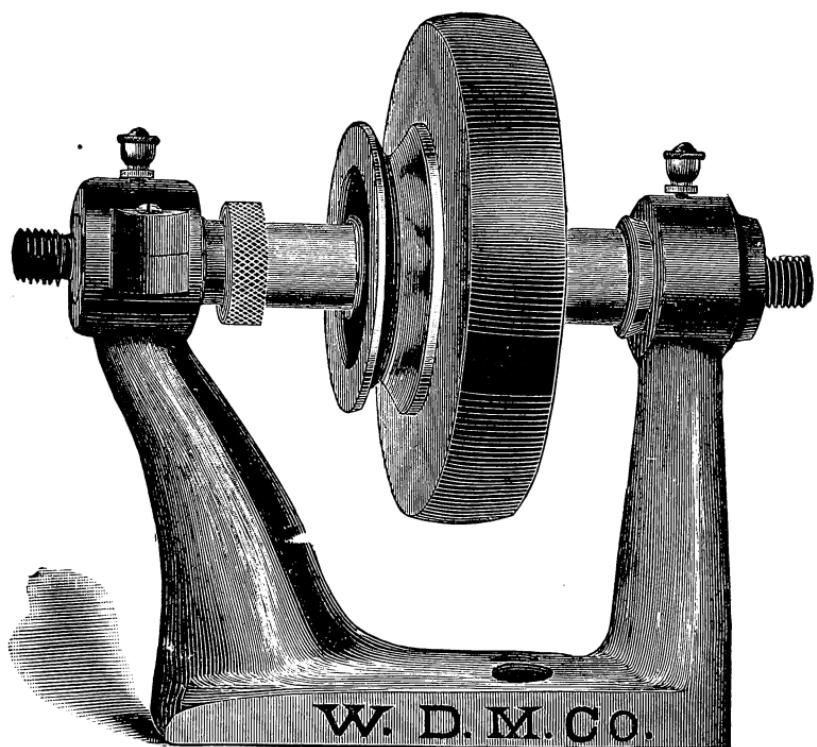
### PRICES.

Separating Files.....	per doz., \$1.00
Separating Saws.....	“ .75
Finishing Strips.....	“ .75

THE WILMINGTON DENTAL M'F'G CO.,  
Philadelphia, New York, Chicago, Washington, Wilmington.

# Improved No. 6 Lathe Head.

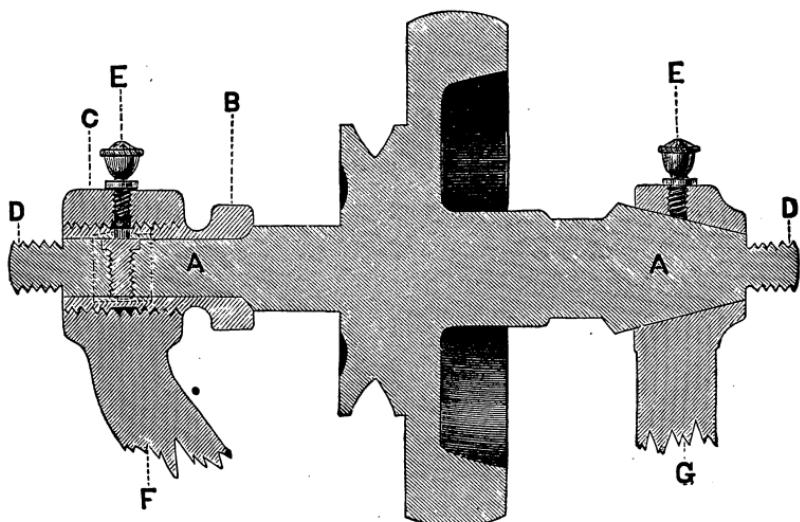
## CONE JOURNAL BEARINGS.



CUTS OF MANDRELS ARE JUST ONE-HALF SIZE.

# Improved No. 6 Lathe Head.

## CONE JOURNAL BEARINGS.



We claim our IMPROVED No. 6 LATHE HEAD to be the simplest and easiest running dental lathe now on the market. There are only eight pieces, including all parts. The spindle A is of steel, with the iron drive wheel cast upon same, and has cone bearings at both ends. On the right the large cone bears directly against the standard G; on the left the small cone bears against the brass box B, through which the spindle A works. The box B is threaded and is held in place by the cap C, which is secured by a screw on each side of it into the standard F. By loosening these screws the box B can be so adjusted as to take up any wear of the spindle A. D is a thread on each end of spindle A to carry mandrels and chucks represented on opposite page. E, E are oil cups for oiling the bearings of the spindle A. The frame work is japanned and all the bright parts heavily nickel-plated. The mandrels are made of brass. Our aim has been to make a first-class, durable dental lathe, and we take pride in claiming that our Improved No. 6 will prove the most satisfactory of any ever offered the profession.

Mandrels Nos. 1, 2, 3, 4 are for the different sizes of corundum wheels, and will be furnished for either the right or left side of lathe.

Mandrel No. 5 will carry brush and felt wheel cones, etc., on right side of lathe.

Mandrel No. 6, same as No. 5, but for left side.

“ “ 7 will carry lathe burs.

“ “ 8 is for reaming.

“ “ 9 is for carrying sand paper, etc.

### —PRICES—

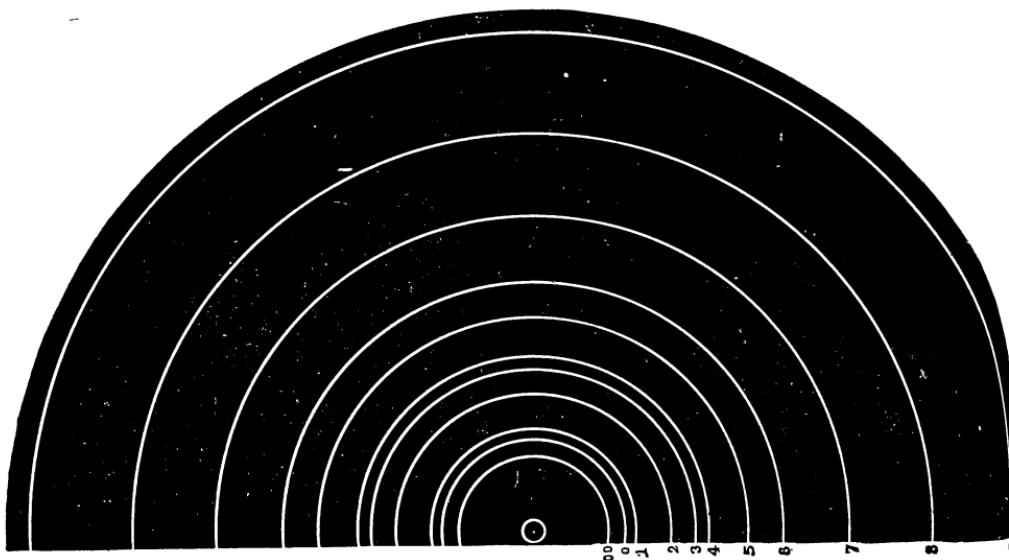
Lathe, complete with Mandrels Nos. 1 to 9.....\$8 50

“ without Mandrels..... 6 50

Mandrels, Nos. 1 to 9, each..... 25

## CORUNDUM WHEELS.

All of our Corundum goods are made of the best grade of Corundum, and great care is exercised in their manufacture. Our wheels consequently are fully adapted to the work required of them, and will be found unsurpassed by any on the market. We recommend them to our customers as being of the same high grade of goods as our other productions. We keep in stock the sizes enumerated in the following list.



### PRICES.

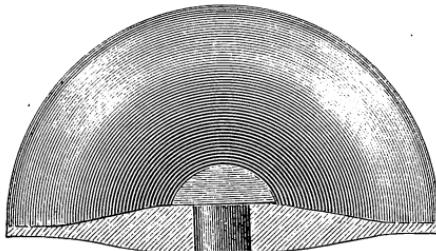
#### Thicknesses of Wheels in Inches.

No.	Diameter.	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$
00	$\frac{3}{4}$ inch.	\$0.06				
0	$\frac{5}{8}$ "	.07				
1	1 "	.10	\$0.12	\$0.15	\$0.17	\$0.20
2	$1\frac{1}{8}$ "	.14	.15	.17	.20	.25
3	$1\frac{1}{4}$ "	.18	.20	.25	.30	.35
4	$1\frac{1}{2}$ "	.22	.25	.30	.35	.40
5	$2\frac{1}{8}$ "	.26	.30	.40	.45	.50
6	$2\frac{1}{4}$ "	.35	.45	.50	.60	.70
7	$3\frac{1}{8}$ "	.50	.60	.70	.85	1.00
8	$4\frac{1}{8}$ "	.75	1.00	1.10	1.25	1.35
9	5 "	1.00	1.25	1.40	1.60	1.75

The one-quarter inch Wheels, Nos. 0 to 7, are made both round and square edge. All others square edge only.

All our Corundums are supplied in three grits: fine, medium and coarse.

# Corundum Wheels.



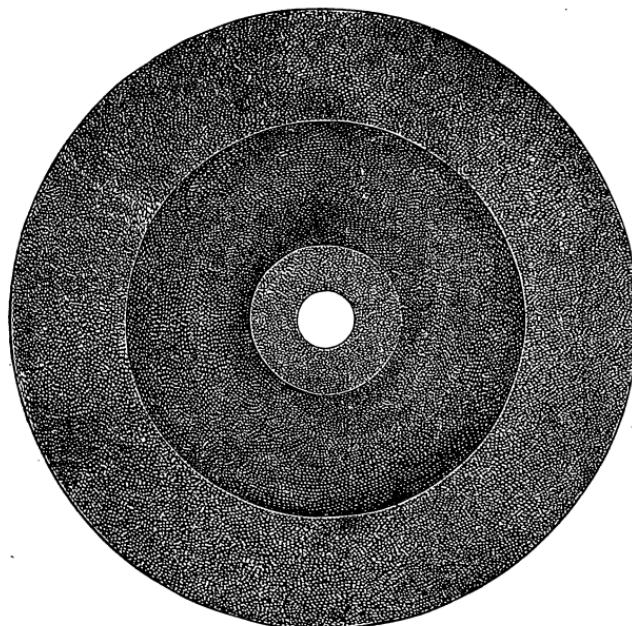
## KNIFE ED GE.

Diameter, 23-16 inches; thickness of cutting edge, 1-16 inch.

Price.....30 cents.

## DEPRESSED CENTER.

(Cut full size.)



Price.....75 cents.

## BASE METALS.

Babbitt-Metal (Haskell's formula), in $\frac{1}{2}$ lb. ingots, per lb.,	\$0.50
Counter-Die Metal, " $\frac{1}{2}$ " " " "	.25
Chamber Metal.....	.30
Lead.....	.12
Pattern Metal.....	.30
Tin .....	.45
Watt's Metal, 6 ingots to a lb.....	per ingot, 1.00
Zinc, in $\frac{1}{2}$ lb. ingots.....	per lb., .14

## CALLIPERS.

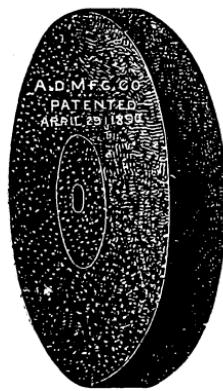
Brass, Double-End, with Set Screw.....	per pair, 40 cents.
" " without " .....	" 25 "
Steel, Registering.....	" 75 "

## REDUCTION IN PRICES.

# COMPOSITION CONES AND WHEELS,

For Finishing and Polishing Rubber and Metal Plates.

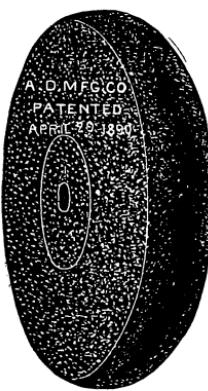
(Patented by Dr. L. M. Halsey, April 29, 1890.)



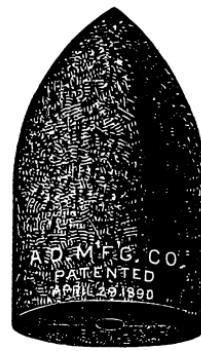
No. 2.



No. 6.



No. 4.



No. 1.

WE are pleased to make quite an advancement in the manner of dressing and polishing rubber and metal plates. It has been well known for many years that a cork is far superior to any other known appliance for polishing. With this knowledge in view Dr. Halsey has patented a composition of which cork is the principal ingredient, and is held together with sufficient rubber to make it strong and flexible, allowing all the advantages of the cork and avoiding its disadvantages in breaking and crumbling.

This composition is far superior to anything that has ever been put upon the market for carrying and retaining the polishing powders. It does away with the file, scraper and sand paper.

If the case is waxed up reasonably well before vulcanizing, the plate can be finished complete with the composition cone and wheel without the use of any other instrument or material except the polishing powders, and an ordinary plate should be ready for the mouth in from five to ten minutes.

The cones and wheels are flexible and durable, and will not heat. In using we advise that the cones and wheels be kept well moistened and coated with pumice or good powder.

One party, with seventeen years' experience, an acknowledged fine workman in every respect, writes Dr. Halsey that "I have put the polisher to careful and severe tests and found it equal to them. It does away with the file, scraper and sand paper except on the ridge, thereby saving great labor and time. I will say without hesitation it is the best article for the purpose I have ever seen."

### WHEELS.

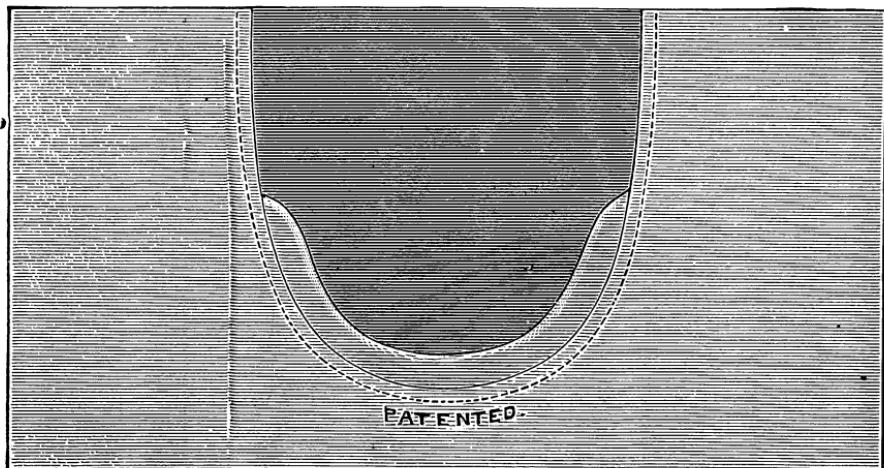
No. 1.	Square edge, $2\frac{3}{8}$ inches diameter,	$\frac{1}{2}$ inch thick.....	30 cents.
No. 2.	" " 2 "	$\frac{1}{2}$ " " .....	20 "
No. 3.	" " $1\frac{1}{2}$ "	$\frac{1}{2}$ " " .....	15 "
No. 4.	Round "	$1\frac{7}{8}$ " " .....	20 "
No. 5.	" " $1\frac{1}{2}$ "	$\frac{1}{2}$ " " .....	15 "
No. 6.	Knife "	$1\frac{7}{8}$ " " .....	20 "
No. 7.	" " $1\frac{1}{2}$ "	$\frac{1}{2}$ " " .....	15 "

### CONES, POINTED AND ROUND END.

No. 1.	$1\frac{3}{4}$ inches long, 1 inch thick.....	25
No. 2.	$1\frac{5}{8}$ " " $\frac{7}{8}$ " " .....	15
No. 3.	$1\frac{1}{2}$ " " $\frac{3}{4}$ " " .....	10

# HALSEY'S RUBBER-DAM AND APRON.

(Patented June 17, 1884.)



**T**HE object of this invention is to prevent the rubber-dam from coming in contact with the face, and at the same time to avoid the difficulty in respiration due to the presence of the dam, and also to avoid the discomfort and inconvenience due to the flow of the saliva.

The rubber-dam is reduced to dimensions which are only sufficient for the purpose necessary; and attached to it is an apron of such an absorbent character as will permit of fairly unimpeded respiration, and with a capacity of absorption sufficient for the purpose for which it is applied.

Does away with napkins.

It is pleasant and comfortable to the patient. It is clean, looks neat, and will keep the chin dry for hours.

The white surface of the napkin makes a good reflector of light. The little pocket catches all filings and fine scraps.

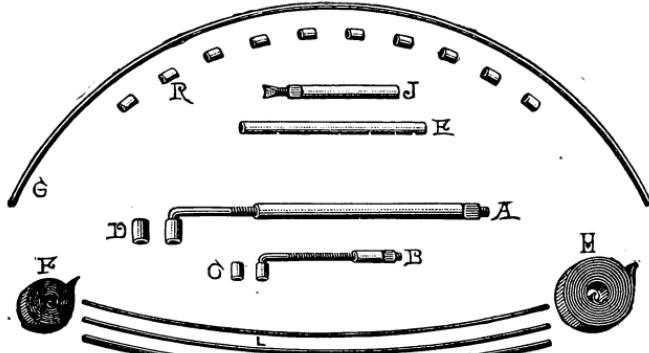
We furnish these made of thin, medium and thick rubber dam, separately, or an assortment in a box.

Price, per box, containing two dozen.....\$1.00

# DR. EDWARD H. ANGLE'S Regulating and Retaining Appliances.

## SET No. 1.

(Patented March 5th, 1889.)

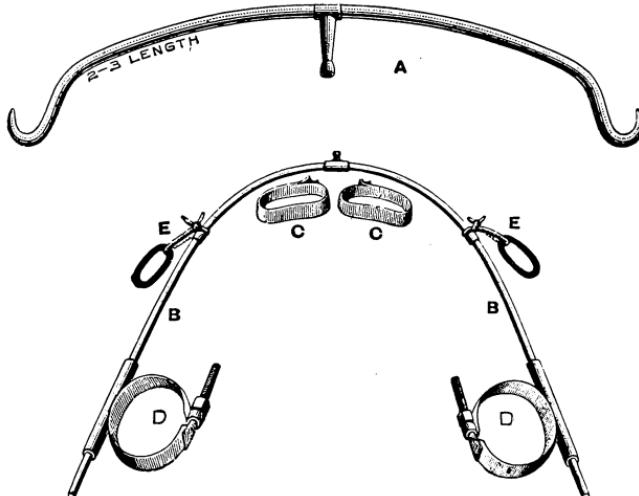


### PRICES.

Set No. 1, complete.....	\$5.00	Coils of band material, F, H, each.....	\$ .50
Traction-screw, A and D, complete.....	1.25	Retaining wire, G.....	.50
Traction-screw, B and C, complete.....	1.00	Rotating levers, L, per dozen.....	.25
Jack-screw, E and J, complete.....	1.00	Retaining pipes, R, set of 12. ....	.75

## SET No. 2.

(Patented November 6th, 1889.)



### PRICES.

Set No. 2, complete.....	\$6.50	Extra band material for making bands, C, C, each.....	\$ .50
Traction bar, A.....	2.00	Rubber bands, E, E, per dozen .....	.40
Wire arch, B.....	1.50	Heavy elastic bands for head cap, set of 4, .40	

As now offered to the profession these sets are considered very nearly faultless, and are undoubtedly the simplest and most applicable of any on the market.

**The Wilmington Dental M'f'g Co.,  
Sole Agent.**

# ANGLE'S ADJUSTABLE CLAMP BANDS.

## FOR BICUSPIDS AND MOLARS.

For the Attachment of Angle's Regulating and Retaining Appliances.



No. 1—Bicuspid.



No. 2—Molar.

These bands were designed to take the place of the plain soldered bands as they are found to be more easily and quickly adjusted, and are less liable to loosen.

### DIRECTIONS FOR APPLYING :

Carefully work the band over the tooth to be encircled, being very careful not to crimp it, and tighten the nut until the band is moderately firm, then burnish the band until it fits accurately the surface of the tooth in contact with it, and mark the points at which the attachments are to be made. Then loosen the nut and remove the band. After the attachments are made, carefully replace and firmly clamp, being careful not to tighten the nut so as to strain the thread. Care should also be taken to avoid heating the screw or nut more than necessary.

It is better to use cement in attaching the band, although it is not absolutely necessary.

These bands are adjustable and will fit all teeth commonly met with.

For abnormally small teeth cut the band, lap, and resolder. In this way small bicuspids and incisors may be fitted.

Jeweler's silver solder or 18-k. gold solder with plenty of borax should be used for making the attachments.

These bands will also make a neat and convenient matrix.

Price ..... \$1.00

# ANGLE'S FRACTURE BANDS.

Used in the Treatment of Fractures of the Maxillary Bones.



No. 3.



No. 4.

connected by ligatures of silk or fine binding wire in the form of the figure 8.

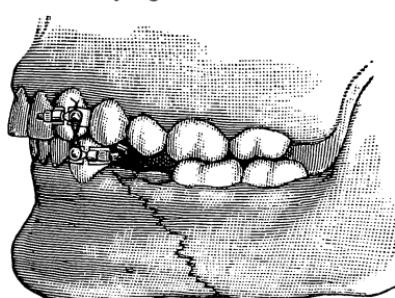


Fig. 1.

As shown in Fig. 1, it will be seen that the fractured bone is securely retained in the most favorable position for repair, by being firmly held in contact with the uninjured jaw by means of the fracture bands firmly clamped about the teeth, and connected by ligatures of silk or fine binding wire in the form of the figure 8.

For a full description of Angle's system of treating fractures of the maxillary bones, see GARRETSON'S ORAL SURGERY, last edition; also, ANGLE'S REGULATION AND RETENTION OF THE TEETH, third edition.

These bands will also be found valuable in regulating the teeth where rubber ligatures are to be used. (See article in *Dental Cosmos* on "The Forcible Eruption of Non- or Partially Erupted Teeth." September, 1891.

Price ..... \$1.10

THE WILMINGTON DENTAL M'F'G CO., Sole Agent,  
Philadelphia, New York, Chicago, Washington, Wilmington.

# 3. THE RYNEAR GOLD CROWN

Patented Sept. 16<sup>th</sup>: 1884.



## DIAGRAM OF SIZES.

### MOLARS.

RIGHT UPPER.		LEFT UPPER.	
1.	2.	3.	4.
5.	6.	7.	8.
13.	14.	15.	16.
17.	18.	19.	20.

### LEFT UPPER WISDOM.

5.	6.	7.	8.
18.	19.		

### BICUSPIDS.

RIGHT UPPER.		RIGHT LOWER.	
25.	26.	27.	28.
29.			
30.			

1st - 2nd		1st - 2nd	
31.	32.	33.	34.
35.	36.	37.	38.
39.	40.	41.	42.

# The Rynear Gold Crown.

---

THESE crowns are struck up solid from 22-karat gold plate, making a simple, beautiful, and well-adapted crown. A set comprises 42 crowns, 18 bicuspids and 24 molars, and are exact counterparts of carefully-selected, typical teeth of each class. They are of good weight, fine form, and well finished.

The comparatively small number of crowns forming a set renders it possible for dentists to keep a complete set in their offices, thus being able to take full advantage of any case that presents itself. To meet this demand, we furnish a full set mounted on pins, and each crown properly numbered and placed in a handsome cloth-covered case, with plate glass top.

The diagram on the opposite page gives exact sizes of crowns at the neck. It will be noticed that there is only a slight difference between sizes, really only one-thousandth of an inch in diameter. To decide on the size desired, twist a piece of binding wire around the neck of the tooth and tighten by twisting the ends, and compare it with the diagram and select nearest size. Order by number only.

In using these crowns we recommend the pliers for crown and bridge-work Nos. 21, 22, 23; with them the crowns can be very easily changed in contour, knuckled, or drawn in at the free edge.

---

## PRICES.

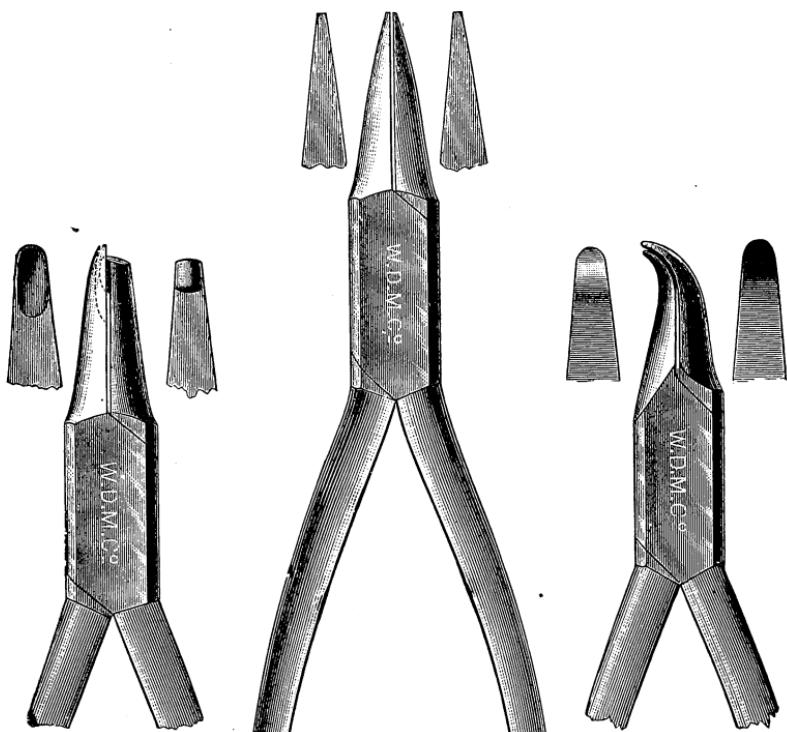
Set complete, 42 crowns, in a neat case ..... \$90 00

Bicuspids, 22-karat gold ..... each, 2 00

Molars, 22- " " ..... " 2 50

We will make to order crowns of 24-karat gold at a cost of \$1.00 extra per crown.

# Pliers for Crown and Bridge-Work.



No. 22.

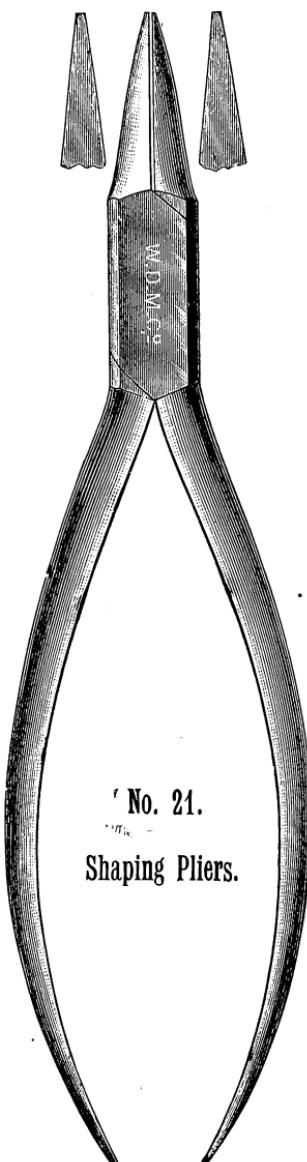
## Knuckling and Expanding Pliers.

No. 21.—*To Knuckle:* Place the knobbed beak well within the crown, at any point desired, and firmly compress the Pliers. *To Expand:* Place the knobbed beak within the crown, at the free edge, and compress the Pliers.

No. 22.—*To Knuckle:* Place the knobbed beak well within the crown, at any point desired, and firmly compress the Pliers. *To Expand:* Place the knobbed beak within the crown, at the free edge, and compress the Pliers.

No. 21.

## Shaping Pliers.



No. 23.

## Contouring and Drawing-in Pliers.

No. 23.—*To Contour:* Place the short beak well within the crown and compress the Pliers. *To Draw In:* Place the short beak within the crown, at its open end, and by sudden compression of the Pliers gradually draw in the free edge.

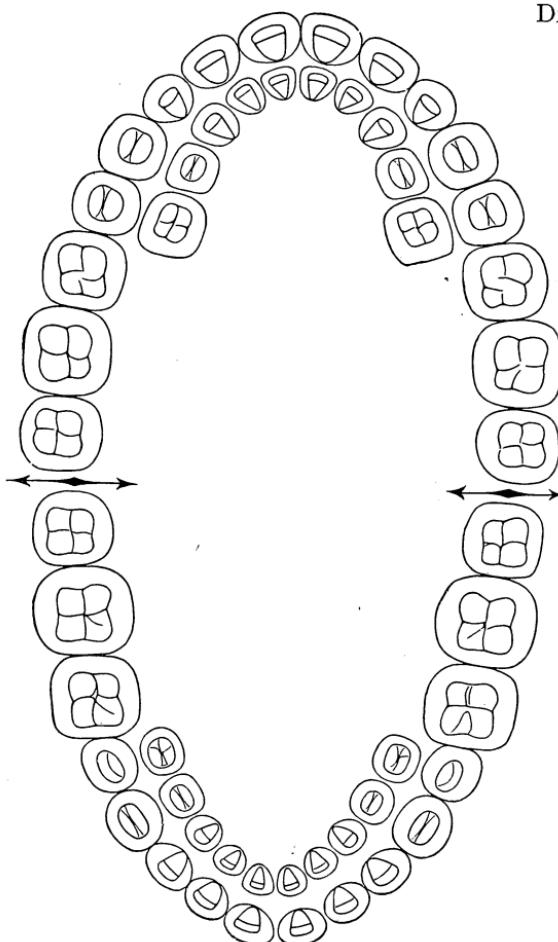
These Pliers are made of a fine quality of steel, and are handsomely made, and are nickel-plated.

## PRICES.

No. 21.....per pair, \$1 25

Nos. 22 and 23..... " " 1 50

# ALLPORT'S DENTAL LEDGER.



DR. ALLPORT designed this Ledger specially for the needs of the dental profession, and to this day it holds its own as being the simplest, yet most intelligible of any Ledger. A chart accompanies each account, and with proper marking will show the state of each mouth and the work that has been done.

Each account is ruled for name and address, date, description of the different operations, charge for same and credit for amounts paid. Each book is suitably indexed.

The paper is of the best and the ruling, printing and binding first-class.

## PRICES.

One account to a page, 300 pages, half Roan.....	\$2.00
Two accounts " 172 " " ..... 2.00	
" " 340 " " ..... 3.00	
" " 340 " half Turkey..... 3.50	

---

We suggest the use of our Examination Tablets and No. 4 Bill Heads with this Ledger, making a complete outfit.

# NO. 1 APPOINTMENT BOOK.

## MONDAY.

8		1	
9		2	
10		3	
11		4	
12		5	

## TUESDAY.

8		1	
9		2	
10		3	
11		4	
12		5	

## WEDNESDAY.

8		1	
9		2	
10		3	
11		4	
12		5	

Can be used for any Year and commencing at any time.

Fine Leather Cover, Good Paper, Memorandum and Cash Account.  
Calendar for Five Years.

## PRICES.

Without Tuck ..... 50 cents.  
With Tuck and Pocket ..... 75 "

# THE DIAGRAM APPOINTMENT BOOK.

The "Diagram" Appointment Book and Pocket Diary is a book suggested by practical dentists, and meets the wants of the profession. The "Diagram" Appointment Book is  $6\frac{3}{4} \times 4\frac{1}{4}$  inches. In the front it has calendars for three years, and a table to show the number of days from any day in one month to the same day in any other month. The new feature of the book combines with an appointment book a DIAGRAM for registering the work to be done, or to make memorandum of the work when finished, by having a diagram for each day, and the diagram in such shape as to be efficient and yet not make the book bulky and unhandy. There are one week's appointments on two opposite pages, and, therefore, six diagrams on same space. In the back of the book are pages for memoranda.

The book may be used without the Diagrams, and then is very similar to other appointment books. There can be no disappointment in the paper, ruling, printing or binding, as they are all first-class in every particular.

TUESDAY.													
2 Mo. 10													
8	Miss Frailey	1	P. W. Peck										
9		2	Edgar Thomas										
10	Bertie Doak	3											
11	Mrs Harmon	4	Paul Ross										
12		5											

The above is a fac-simile of one day's work in the "Diagram Appointment Book;" the appointments are made as usual, and the fillings are accurately noted on the diagram. No ledger or other memorandum is necessary for immediate use; at leisure the work may be copied into the large ledger, if desired. After each person's name a note may be made of the amount charged or paid. It will be seen that it is easy to keep a record on this diagram of the work of this day, or of any day, by letting the hour of appointment stand for that person in the diagram; thus the figure 8 in the diagram stands for Miss Frailey, the 8 o'clock appointment.

**Price in Cloth, 50 Cents.**

**Leather, 75 Cents.**

Chico, Calif., 18<sup>th</sup>

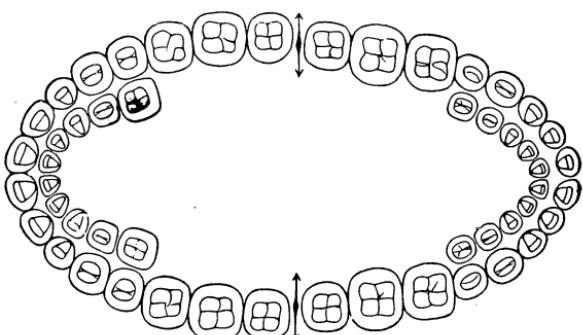
10

XXXII

Dr. to & W. & Z. & KING, & Dentist. ↵

*Amst*  
*No.*  
*Date.*

**Bill Head No. 3.** This Bill Head, with name and address on fine paper, \$1.00 for 100, \$3.25 for 500. This Bill Head, without name and address, 60 Cents for 100.



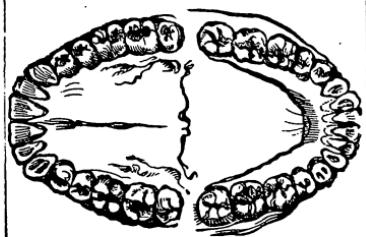
**Bill Head No. 4**, is just like No. 3, except the lines are ruled in red and blue, like Allport's Ledger. Price with name and address, **\$1.15** for 100, **\$3.75** for 500. Without name and address, **75** Cents for 100.

NO. 2 BILL HEADS.

189

No. .

M...



Dr. to

## SURGEON DENTIST.

七

### *Received Payment, ..*

Price. .... per hundred. 30 cents.

# BARGAINS!

## AT PHILADELPHIA DEPOT.

No. 1.	Eastlake Cabinet. Walnut; Tennessee Marble top. In order, only a little shop-worn. Price, new, \$50. Price..	\$30 00
No. 2.	No. 6 Gas Outfit, complete, with 100 gallons gas. Price....	23 00
No. 3.	Archer Chair. Iron Frame and Foot-stool. Upholstered in Figured Maroon Plush. Nickel-plated Spittoon. Equal to new. Price†.....	35 00
No. 4.	Register Engine. Hodge Hand-piece. Good order. Price*	25 00
No. 5.	Davis & Co.'s Gasometer, with Automatic Inhaler, Tubing, 100-gallon Cylinder and Gas. Good order. Price .....	30 00
	Gasometer only.....	15 00
No. 6.	Fletcher Gasometer, complete with Bracket Ornament, Long's Inhaler, Tubing, 100-gallon Cylinder and Gas. Only shop-worn. Cost, new, \$44. Price .....	30 00
	Gasometer only.....	15 00
No. 7.	Harris Dental Chair. Upholstered in Green Plush, which is much worn, but not torn. Chair in good order. Price†.	25 00
No. 8.	Detroit Motor, wound for use with incandescent current. In first-class order. New Hand-piece, Cable and Sheath. Second-hand Stand and Pedal Switch. Cost, new, \$75.00. Price*.....	50 00
No. 9.	Bonwill Electric Mallet. In good working order. Price..	25 00
No. 10.	Long's Gasometer and Inhaler, with 100-gallon Gas Cylinder and Gas. All in good order. Price.....	48 00
	Gasometer only.....	35 00
No. 12.	Driving Wheel, Open Centre, with Treadle. Only shop-worn	5 00
No. 13.	Revolving Automatic Plugger Point Rack for 30 points. Nickel-plated. Price.....	60
No. 14.	Cross Bar Vulcanizer, 2 flasks. Complete for Gas. In first-class order. Price.....	9 00
No. 15.	Archer Chair. Wooden Frame. Neat Foot-stool. Chair Upholstered in Green Leatherette. All in very good order. Price†.....	20 00
No. 16.	S. S. White Engine. Medium size Wheel. Palmer Pulley Head. No. 7 Hand-piece. All in good order. Price*....	25 00
No. 17.	Shaw Engine, Base and Standard, with Palmer Pulley Head. No. 6 Cone Journal Hand-piece, Cable and Sheath. All in good order. Price *.....	20 00
No. 18.	Seabury Vulcanizer, with two Flasks for Gas.....	12 00
No. 19.	No. 1 Bunsen Battery; 4 Cells. In good order, with Walnut Case.....	5 00
No. 20.	One Carroll Aluminum Furnace; never been used. Price, new, \$20.00; 10 qts. Investing Material.....	10 00
No. 24.	Bonwill Engine. Palmer Pulley Head. Bonwill Hand-piece. Good order. Price*.....	20 00

\*Boxing 75 cents extra.

†Boxing, \$1.00 extra.

# BARGAINS !

## AT NEW YORK DEPOT.

No. 1 N.	Gas Outfit, Tripod, 100 gallons gas, complete, with Tubing, Inhaler, etc. Good condition.....	\$22 50
No. 2 N.	Hood & Reynold Engine. Good condition.....	27 50
No. 3 N.	S. S. W. Engine with Hodge Hand-piece. Price*.....	25 00
No. 5 N.	S. S. W. Engine with Universal Hand-piece. Excellent condition.....	30 00
No. 6 N.	Hood & Reynolds' Standard Chair ; Maroon Plush. Good as new. With Spittoon. Complete.....	90 00
No. 7 N.	Hood & Reynolds' Lathe, with Lawrence Head, in excellent order. Price.....	12 00
No. 8 N.	Fletcher's Gasometer, complete, with Brackets. Never used .....	20 00
No. 9 N.	Johnston Engine, O. S., 6 Hand piece.....	10 00
No. 10 N.	Elliott Susp. Engine, No. 4 Hand-piece. In good order.	20 00
No. 11 N.	Johnston Engine, Universal Hand-piece.....	15 00
No. 12 N.	Two Two-case Whitney Vulcanizer, second-hand, with New Flasks, Jackets, Stand and Burner. Complete. New, \$14.00.....	10 00
No. 13 N.	Justi Tripod. Adjustable.....	3 00
No. 14 N.	Our No. 1 Cabinet in Antique Oak or Walnut. Price.....	35 00
No. 15 N.	H. and R. Standard Engine, with Brown Hand-piece. Shop-worn.....	35 00
No. 16 N.	Archer Chair. Wood base.....	20 00
No. 17 N.	Morrison Chair. Good condition. Complete with Spittoon.....	65 00
No. 18 N.	One S. S. White Office Lathe, No. 1. Fine order.....	12 50
No. 19 N.	New Dental Bracket. Send for illustration ; special....	6 00
No. 20 N.	Tripod for 100 gal. Cylinder. Good as new.....	3 25
No. 22 N.	Shaw Engine, with No. 6 Hand-piece. Good as new....	35 00
No. 24 N.	Few gross of our celebrated Stone-cut Engine Burs, seconds, shanks of which have taken rust. These are put up one dozen of a number in package, and will prove the best bargain you have had in years, at \$9.00 per gross, \$5.00 per half gross, \$1.00 per dozen.	

\*Boxing, 75 cents extra.

# BAR GAINS!

## AT CHICAGO DEPOT.

No. 1 C. One Hood & Reynolds' Chair, Maroon Plush, good condition. Cost \$120.00.....	\$75 00
No. 2 C. One Harris Chair, Maroon Plush.....	50 00
No. 3 C. One Fountain Spittoon, complete for Wilkerson Chair except gold trap, used only a short time. Cost \$66.00....	50 00
No. 4 C. One Improved Bonwill Engine Mallet. Cost \$12.00.....	8 00
No. 5 C. One 4-Cell Partz Battery and Walnut Case.....	10 00

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## AT WASHINGTON DEPOT.

No. 1 W. Wood Archer Chair, with Foot-rest and Cuspidor. In fair condition. Price.....	\$25 00
No. 2 W. Wood Archer Chair, without Foot-rest or Cuspidor. In fair condition.....	20 00
No. 3 W. Wood Archer Chair, with Foot-rest and Cuspidor. Upholstered with Maroon Plush. In first-class condition. Price.....	35 00
No. 4 W. S. S. W. Model Cabinet Case. In good condition.....	45 00
No. 5 W. Tripod for 500-gallon Gas Cylinder.....	3 50
No. 6 W. United States Lathe. As good as new.....	12 00
No. 7 W. Old Style Lathe.....	7 00
No. 8 W. One S. S. W. Dental Engine, with old-style Hodge Hand-piece and Flexible Attachment.....	20 00
No. 9 W. One S. S. W. Engine, No. 8 Hand-piece with Flexible Attachment. In first-class condition. Price.....	25 00
No. 10 W. Bonwill Electro-Magnetic Mallet and Bunsen Battery, with four cells. In first-class order. Good as new...	35 00
No. 11 W. Electro-Magnetic Mallet. In good condition.....	18 00
No. 12 W. Pneumatic Mallet. In good condition.....	3 50

## WANTS, FOR SALE, ETC.

**T**o ADVERTISERS.—Our terms for advertising under above headings are ten cents per word, including the captions, "Wanted," or "For Sale," and address. Initials will be charged same as words. Advertisements must be in our hands by the 20th of each month, to insure insertion in the following month's issue. Cash must accompany all advertisements.

### THE WILMINGTON DENTAL M'F'G CO.,

1413 Filbert Street, Philadelphia, Pa.

**BRANCHES:** { 12 East 23d Street, New York.  
78 State Street, Chicago, Ill.  
1217 F St., N. W., Washington, D. C.

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597—**Wanted.**—Practice; town preferred. Address, "Box 338," Seaforth, Ontario, Can.

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598—**For Sale.**—Office complete and practice. Address, "Box 99," Hallets-ville, Texas.

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599—**Wanted.**—Situation by graduate of Michigan, with a first-class dentist. Address, "E.," care of The Wilmington Dental M'f'g Co., Philadelphia.

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600—**For Sale.**—Office in enterprising Connecticut town. Address, "Dentist No. 2," care of The Wilmington Dental M'f'g Co., Philadelphia.

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601—**For Sale.**—A bargain; first-class practice; fine location in Chicago. Address, "Chicago," care of The Wilmington Dental M'f'g Co., Chicago, Ill.

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602—**For Sale.**—Cheap, office and practice in Michigan; complete outfit; established twenty-five years. Address, "Dentist," care of The Wilmington Dental M'f'g Co., Philadelphia.

---

603—**Wanted.**—All-round assistant of good habits. Graduate of University of Michigan preferred. References required. Address, "Ht.," care of The Wilmington Dental M'f'g Co., Philadelphia.

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604—**Dentists Wanted.**—Two first-class operators, with ten to fifteen years' experience, who are thorough gentlemen. Address, Boston Dental Parlors, 146 State street, Chicago, Ill.

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605—**For Sale.**—Practice and partial outfit cheap; Connecticut town of 6,000 only dentist. Address, "Connecticut," care of The Wilmington Dental M'f'g Co., 12 E. Twenty-third street, New York.

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606—**For Sale.**—The oldest and best paying practice in city of 10,000 population; only one other dental office in city. Practically no competition. Reason for selling, want to go into other business. For description and terms, address "H. M.," care of The Wilmington Dental M'f'g Co., Philadelphia.

## WANTS, FOR SALE, ETC.—Continued.

607—**Wanted.**—Position by first class, rapid, thorough operator and crown-worker; graduate; excellent experience. Permanent position with non-advertising man preferred. State salary. Address, “X,” care of The Wilmington Dental M’fg Co., Philadelphia.

608—**For Sale.**—Bargain. Fine office; two best chairs; best location in Milwaukee; five years’ practice; great opportunity; for \$1,000, if taken now. Address, “D,” Carrier 4, Milwaukee, Wis.

609—**Wanted.**—Position or partnership by a graduate of University of Michigan. Thorough all-round man. Ohio or Michigan preferred. Investigation of references solicited. Address, “Opportunity,” care of The Wilmington Dental M’fg Co., Philadelphia.

610—**For Sale.**—Best located office in Cincinnati, O., doing a good business. Fine chance. Will sell at invoice. Complete, with hot and cold water, electric power and lights. Good reasons. Address, Arophene Dental Co., Cincinnati, O.

611—**For Sale.**—Office, with whole or partial outfit, very cheap; city, 5,000. Address, “Snap,” care of The Wilmington Dental M’fg Co., Chicago, Ill.

612—**For Sale or Exchange.**—Town of 1,000; practice \$1,500 per year; no other dentist. Address, “Kansas,” care of The Wilmington Dental M’fg Co., Philadelphia.

613—**For Sale.**—\$3,000 growing practice on prominent street in Philadelphia. Good chance for young man with a little money. Address, “Williams,” care of The Wilmington Dental M’fg Co.

614—**Wanted.**—A first-class crown and bridge workman; also an experienced man for extracting and taking impressions. Must be registered. No “bums.” Address, Hale Dental Co., Boston, Mass.

### DIAMOND DRILLS.

For drilling cavities in artificial teeth. Owing to the natural appearance of filling in the front artificial teeth, and the increasing demand for our goods, we are pleased to inform the dental profession throughout the United States that we can supply these drills at prices within the reach of every dentist. Why pay 50 or 75 cents to have a tooth drilled, when, with these drills, you can do your own and your neighboring dentists’ work? Each drill is warranted to drill two hundred teeth before it needs recutting. Made to fit any machine, in three sizes; \$1.25; \$1.50 and \$1.75 each, or \$4.00 for the set.

Call or address, **THE M. J. KILGORE CO.,**  
*Manufacturers of Diamond Tools, Drawplates, Electric Jewels, etc.,*  
**No. 34 Fuller St., Waltham, Mass.**

### A GOOD THING.

## DR. SLADE’S LOCAL ANÆSTHETIC.

I could publish whole pages of references, but what’s the use? Dr. T. B. Welch, editor of this journal, has a son and daughter both practical dentists in Vineland; they have used it in the past and use it now. I can proudly refer to them, who have tested its merits the past two years.

**PRICES.** { By mail, 2 ozs., with full directions ..... \$1.75.  
“ “ 4 “ “ “ ..... 3.00.  
(Sample, 1 oz., “ “ ..... 1.00.

### \*\*\*\*\*CAVITIES\*\*\*\*\*

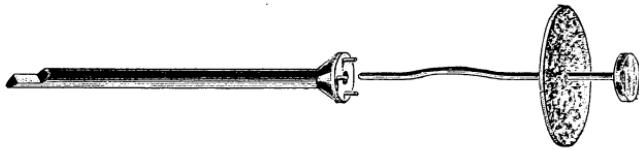
#### Drilled in Porcelain Teeth with Good Retaining Points.

Designate with pencil or ink mark the location and size of cavities desired, and directions will be closely followed.

Price for each Cavity, = = 25 cents.

**S. C. SLADE, D.D.S., Vineland, N. J.**

# THE MORGAN-MAXFIELD DISK MANDREL.



PATENTED MARCH 21st, 1893.

The best Disk carrier now on the market. Made for the Universal, Cone-journal or Right-angle Hand-piece.

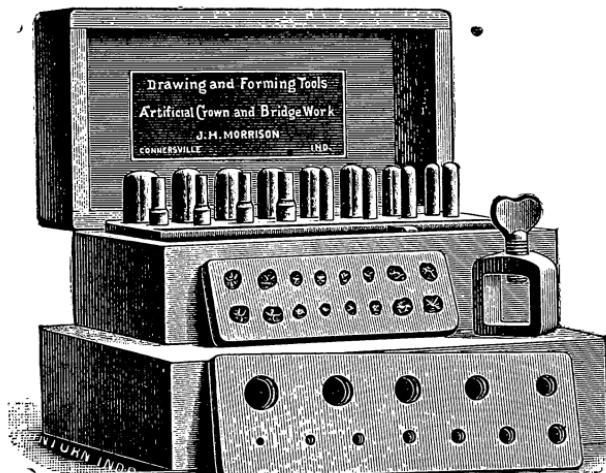
## Price Advanced to 75 Cents.

ORDER FROM YOUR DEALER,

OR SEND TO

GEO. A. MAXFIELD, D D.S., Holyoke, Mass.

## MORRISON'S CROWNING SYSTEM.



A most practical and simple method of making seamless cap crowns, seamless caps, collars and shells, for all forms of crown- and bridge-work.

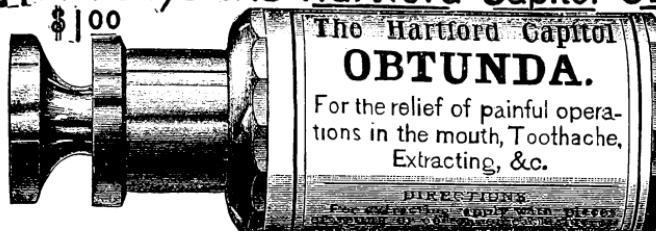
Cuspid and incisor crowns easily made of absolutely perfect form.

A Seamless Contour Crown for any molar or bicuspid can be made by any one of ordinary skill in FIVE MINUTES.

Price, Complete, - - - - - \$16.00  
May be ordered of any Dental Depot, or of the Manufacturer,

J. H. MORRISON,  
CONNERSVILLE, IND.

Are you IN IT, says the TOOTH. Don't you hear  
ME says the NERVE. By— but I'll knock you  
both out, says the Owner. The Contract is  
Mine, says the Hartford Capitol OBTUNDA.



Id est  
est  
Buy of your  
Dealer.

Hartford Dental Depot, Hartford, Ct.

DR. THROCKMORTON'S

Removable Bridge Teeth and Teeth Without Plate.

Made on Gold, Aluminum, and all the white metals, and very nice work can be made on rubber and gold. The teeth are firmly clasped in the mouth, and the patient can remove them, and clean and replace them. Any dentist that can make a rubber plate can do this work. In this patent I have simplified dentistry and brought it to perfection, just where it belongs. Dentists having difficult partial cases can send them articulated, and I will attach the patent, and finish ready to fit in the mouth. Write for circular, name the county. I only sell to one man, deeding my right to him, and give him time to pay, on monthly installments of \$5 or \$10 per month. I give steel stamp and electrotypes free. Sent on approval by express, allowing examination.

J. A. THROCKMORTON, D.D.S., Sidney, Ohio.

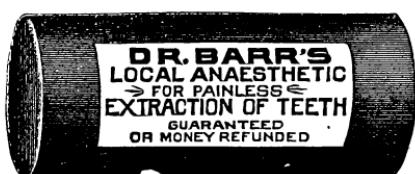
W. E. AUGHINBAUGH,

American and Foreign  
Patents, Attorney and  
Counsellor-at-Law:

ROOMS 60, 61, 62 MCGILL BUILDING,

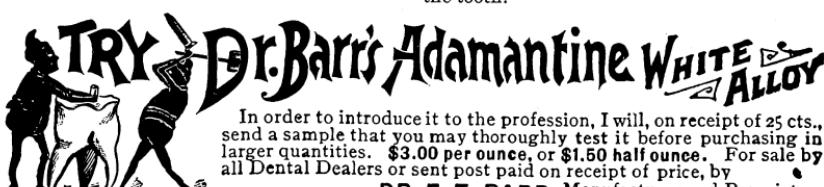
G Street Northwest, WASHINGTON, D. C.

PAINLESS DENTISTRY.



A two-ounce bottle of Barr's Local Anæsthetic sent prepaid, to any address in the U. S. for \$1.00, and guaranteed to make teeth extracting painless or money refunded, by Dr. E. T. BARR, Manufacturer and Proprietor, Bowling Green, Ky.

DIRECTIONS.—Dry the gums thoroughly, then apply the "Anæsthetic" to the gums around the tooth with a peldorf of cotton; let it remain for one minute, then instantly remove the tooth.



In order to introduce it to the profession, I will, on receipt of 25 cts., send a sample that you may thoroughly test it before purchasing in larger quantities. \$3.00 per ounce, or \$1.50 half ounce. For sale by all Dental Dealers or sent post paid on receipt of price, by

DR. E. T. BARR, Manufacturer and Proprietor,

BOWLING GREEN, KY.

For Sale by THE WILMINGTON DENTAL M'F'G CO.

USED BY ALL SURGEONS.

# CAMPHO-PHÉNIQUE

(C<sub>9</sub>H<sub>10</sub>O.)

EFFICIENT

PAINLESS

UNIRRITATING

CERMICIDES

ANTISEPTICS

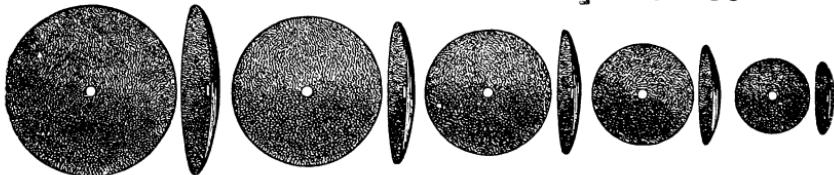
# CHLORO-PHÉNIQUE

(C<sub>6</sub>H<sub>4</sub>(O)Cl.)

For Literature and Samples, address Phénique Chemical Co., St. Louis, Mo.

FOR SALE EVERYWHERE.

## TEAGUE'S DEPRESSED DISKS.



7/8 inch

3/4 inch.

5/8 inch.

1/2 inch.

5/8 inch.

These Disks are made to fit the convex surface of a tooth and thereby preserve the contour in dressing a filling. Cut from Sand Paper, Emery Paper, Cuttlefish Paper, Emery Cloth and Crocus Cloth. Coarse and fine grits of each, except Crocus Cloth; this is of a very fine grit for a lustrous polish. In addition to the above material, Disks of fine and coarse Garnet Paper are put in the boxes of Assorted Disks. A chart for accuracy in ordering Depressed Disks furnished on application.

Depressed Paper Disks, - - - - -	in boxes of 100, 15 cts.
" Cloth " " - - - - -	" " 100, 35 "
" Assorted" sizes 7/8 in., 3/4 in., - - - - -	" " 200, 30 "
" " " 5/8 in., 3/4 in., 5/8 in., - - - - -	" " 400, 60 "
" " " 5/8 in., 3/4 in., 5/8 in., 3/4 in., 5/8 in., - - - - -	" " 500, 75 "

### OTHER SPECIALTIES:

Teague's Impression Compound, - - - - -	4-lb. can, 50 cts.
" Sand Paper Strip Chuck, - - - - -	25 "
" Cavity Cap Disks, - - - - -	per 100, 25 "
" Capsicum Plasters, - - - - -	" 100, 50 "
" Arm-rest, - - - - -	\$1.00

SOLD BY THE TRADE,

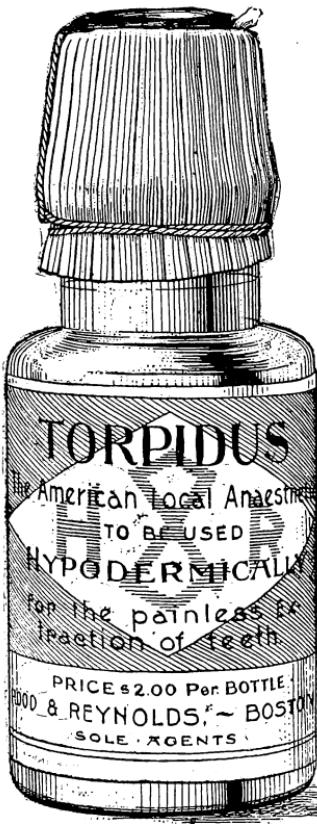
or by

Dr. B. H. TEAGUE, - - - - - Aiken, S. C.

# TORPIDUS.

WE have taken the *Sole Agency of Torpidus* only after the most careful and exhaustive experiments. In every case it has proved itself to be an *ideal obtundent*, the effects lasting fifteen to twenty minutes, and void of all unpleasant after effects.

It can be used freely and fearlessly, as it is



## WARRANTED

to contain *no carbolic acid* or other drug that would cause *sloughing*.

We have sold hundreds of bottles, and have heard nothing but praise from its use.

Care should always be taken to have the hypodermic syringe antiseptically clean, and the drug can be administered freely without fear of *sore mouths* or

## SLOUGHING.

In using, follow directions closely.

### DIRECTIONS.

Use any Hypodermic Syringe, taking precaution that the needle is perfectly clean and free from air. Inject the gums on both sides of the tooth or teeth to be extracted until they turn white..

Have the point of the needle against process at or just below the top of socket. If needle is inserted too far the Anæsthetic will form a sac and be wasted. Care must be taken that Patients expectorate so none will get into throat, as it will cause a numbness.

For extraction of all teeth, from 1 to 3 syringes-full is generally sufficient.

## FOR USE OF TORPIDUS WE RECOMMEND THE NEAL ALL-METAL SYRINGE.

All parts coming in contact with the fluid are of *Pure Aluminum*.

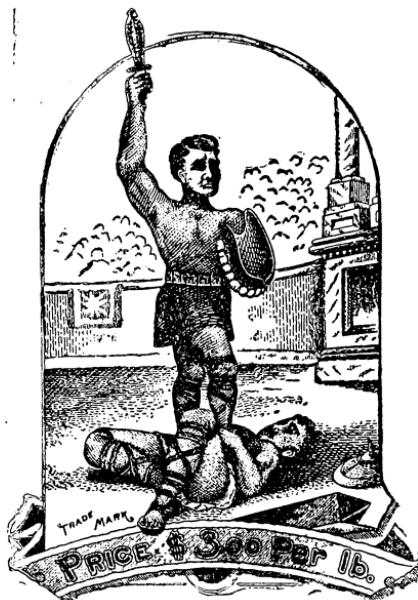
NO PACKING TO GET OUT OF ORDER.

EXTRA HEAVY CROSS BAR. LARGE OVAL END TO PISTON..

Price, complete, in leather case with extra needle, \$4.00.

**HOOD & REYNOLDS,**  
BOSTON, MASS.

# THE "GLADIATOR" RUBBER



is absolutely the strongest rubber ever made for a dental base; it makes an exceedingly light plate of beautiful color, and owing to its flexible and elastic qualities a person wearing a plate made from this rubber need have no fear that the gums will become either irritated or sore. Another great feature of this rubber is that it can be used without fear of either shrinking, checking, or breaking the blocks.

I take pleasure in calling the attention of the profession to my reliable and well-known brand of

## IMPERIAL STANDARD DENTAL RUBBERS.

NO.	PER LB.	NO.	PER LB.
1. Light Orange, - - - - -	\$2.25	7. Nubian, or Jet Black, - - - - -	\$3.00
2. Medium Orange, - - - - -	2.25	8. Ordinary Black, - - - - -	2.25
3. Dark Orange, - - - - -	2.75	9. Pink (light shade), - - - - -	5.00
4. Mottled (light red), - - - - -	2.75	10. Pink (medium shade), - - - - -	5.00
5. Mottled (dark red), - - - - -	2.75	11. Pink (deep shade), - - - - -	5.00
6. Maroon, - - - - -	2.75	12. Brown Rubber, - - - - -	3.00

Of these rubbers I direct your special attention to the following:

### PINK.

(GENUINE AMERICAN MANUFACTURE)

I am positively the only manufacturer of pink rubber in this country, and guarantee it superior in color, strength and finish to any of the foreign makes. In color the No. 9 (LIGHT SHADE) is particularly remarkable for its gum or flesh-like resemblance.

### MAROON.

This rubber is remarkable for its beautiful maroon shade, which, combined with great strength, elasticity, and finish produces a very desirable plate. It is highly recommended by some of the most prominent dentists in the country.

### MOTTLED.

This rubber, owing to its beautiful mottled appearance (variegated in color), makes an exceedingly pretty plate. Its other chief merits are increased elasticity, strength, and finish.

I desire to state that I am the original INVENTOR of the "Imperial Standard" Pink, Maroon, and Mottled rubbers, and warn the profession against spurious imitations which have lately been introduced.

## IMPERIAL RUBBER WORKS,

8 COLLEGE PLACE,

E. J. McCORMICK, PROPRIETOR.

NEW YORK.

**\$1.00.**

Upon receipt of this amount will send by Mail, post-paid, Sample Package containing all the different Rubbers.

ESTABLISHED 1865.

# Samson Rubber.

STRONGEST AND MOST UNIFORM RUBBER MANUFACTURED.



TRADE-MARK

No. 3788.

Registered

June 20th, 1876.

## Price-List of Dental Rubbers, Weighted Rubbers for Lower Sets, and Gutta-Percha.

No. 1 and No. 2 Rubber.....	per lb.,	\$2.25
Pure Black and Jet Black Rubber.....	"	2.25
Para Black and Gutta-Percha Base Plate.....	"	2.25
In 10 lb. lots....per lb., \$2.00	In 25 lb. lots....per lb., \$1.90	
In 50 lb. lots.....per lb., \$1.75		

<b>SAMSON and MAROON RUBBER</b> .....	per lb.,	\$2.75
Flexible or Palate Rubber.....	"	2.75
Vulcanite Gutta-Percha.....	"	2.75
In 5 lb. lots....per lb., \$2.50	In 10 lb. lots....per lb., \$2.25	
In 25 lb. lots...." 2.00	In 50 lb. lots...." 1.80	

**MOTTLED RUBBER, THE FIRST RUBBER I MANUFACTURED,  
CAN BE MADE IN ALL THE ABOVE SHADES.**

No. 1, No. 2, and Black Weighted Rubbers, Mixed with Pure Metal.....	per lb.,	\$4.00
--	----------	--------

## ADAMANTINE FILLING OR STOPPING.

These Rubbers being made from carefully selected Para Gum, and Manufactured by Improved Processes, I can guarantee them to give entire satisfaction to the user, and retain a high polish.

For any Further Information, Address,

**EUGENE DOHERTY,**  
110 and 112 Kent Ave., Cor. North Eighth St.,  
BROOKLYN, E. D., N. Y.

# R. S. WILLIAMS,

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MANUFACTURER OF

STANDARD COHESIVE GOLD FOIL,  
STANDARD MEDIUM GOLD FOIL,  
STANDARD SOFT GOLD FOIL,  
STANDARD CORRUGATED GOLD FOIL,  
STANDARD CRYSTAL SURFACE GOLD (Rolled),  
STANDARD UNTRIMMED GOLD FOIL (Cohesive),  
STANDARD UNTRIMMED GOLD FOIL (Soft).

## Standard Gold Cylinders, Styles A, B AND C.

NON-TIPPING GOLD CYLINDERS (Cohesive),  
NON-TIPPING GOLD CYLINDERS (Soft),  
BURNISH GOLD CYLINDERS (Cohesive),  
BURNISH GOLD CYLINDERS (Soft).

## NON-TIPPING GOLD BLOCKS

RECTANGULAR GOLD PELLETS,  
FOLDED GOLD FOIL,  
GOLD and PLATINA for Filling (Folds and Rolled),  
ELECTRIC GOLD (Cohesive. Always reliable).

## CRYSTALLOID GOLD.

### The Most Practical Plastic Gold.

Obviates all difficulty in commencing fillings.

STANDARD TIN FOIL and CYLINDERS,  
GOLD LIGATURE WIRE,  
AMALGAM ALLOY, No. 1.

GOLD PLATE, SOLDERS, WIRE, Etc. } For Crown- and  
PLATINA PLATE and WIRE (Hard and Soft). } Bridge-Work.

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SEND FOR DESCRIPTIVE PRICE-LIST.

  
DENTAL DEPOT,

115 West Forty-second Street, New York City.

For Sale by THE WILMINGTON DENTAL M'F'G CO.,  
PHILADELPHIA, NEW YORK, CHICAGO, WASHINGTON, WILMINGTON

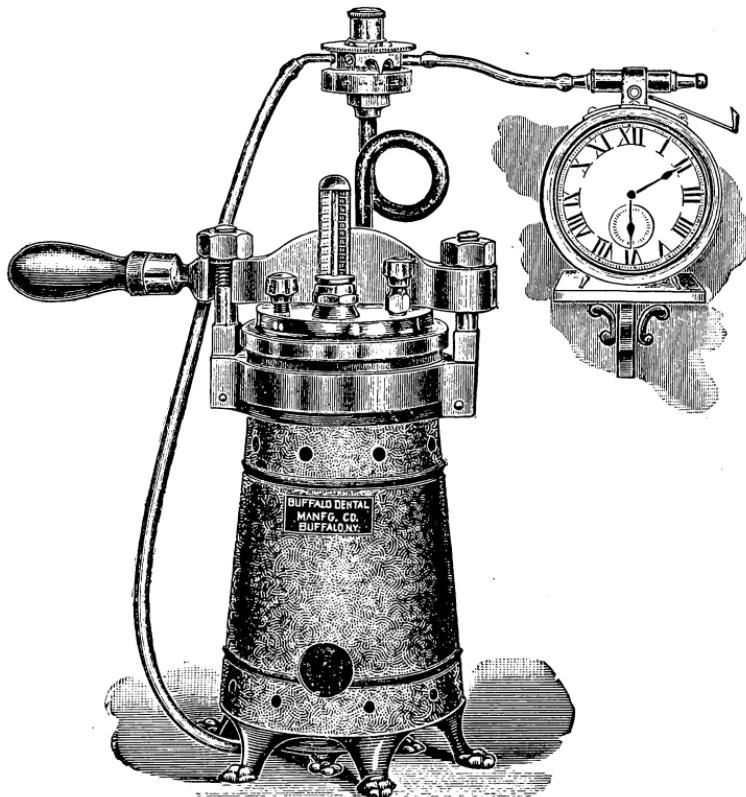
Sometime You Will Want a

# Gas and Time Regulator

For Your VULCANIZER,

AND YOU WILL WANT

THE BEST, MOST CONVENIENT AND RELIABLE ONE MADE.



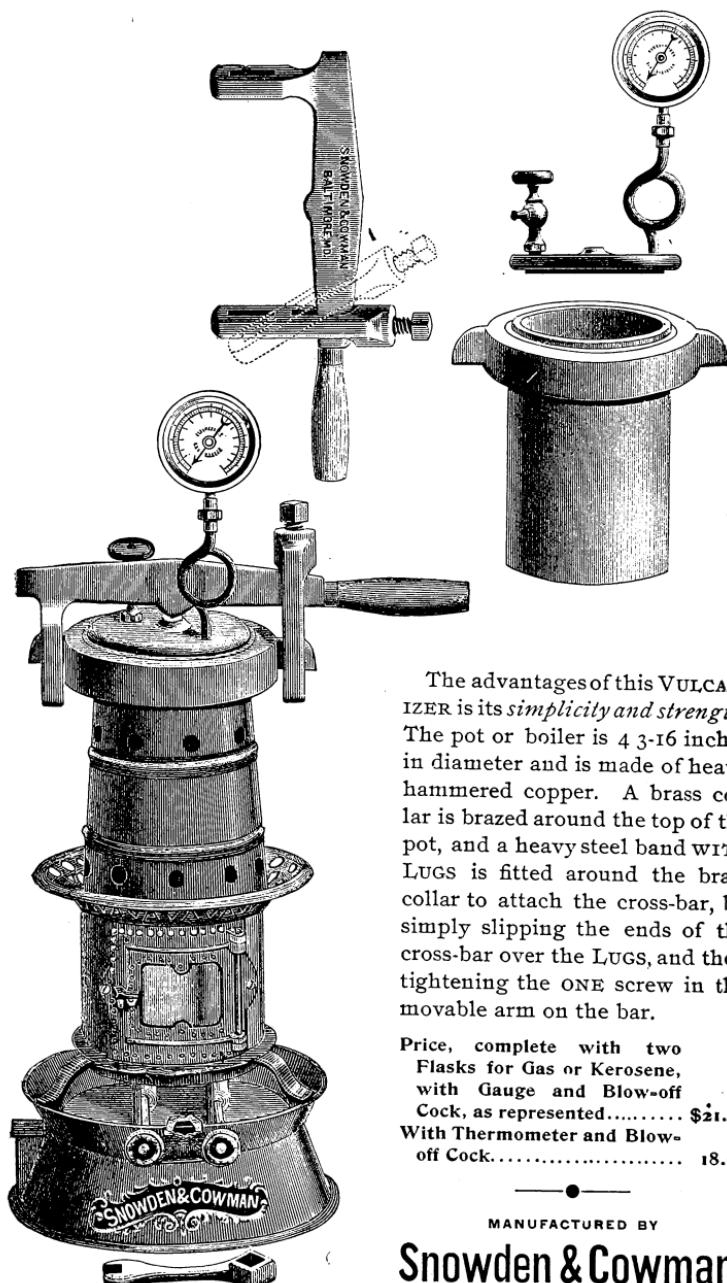
No 4 Coolidge-Lewis Gas and Time Regulator mounted on B. D. M. Co.'s Cross-Bar Vulcanizer.

## THE COOLIDGE-LEWIS Graduated Gas Regulator, No. 4,

IS THE ONE THAT IS GIVING UNIVERSAL SATISFACTION.

Manufactured only by  
BUFFALO DENTAL MANUFACTURING CO.

# Snowden & Cowman's IMPROVED CROSS- BAR VULCANIZER.



The advantages of this VULCANIZER is its *simplicity and strength*. The pot or boiler is 4 3-16 inches in diameter and is made of heavy hammered copper. A brass collar is brazed around the top of the pot, and a heavy steel band WITH LUGS is fitted around the brass collar to attach the cross-bar, by simply slipping the ends of the cross-bar over the LUGS, and then tightening the ONE screw in the movable arm on the bar.

Price, complete with two  
Flasks for Gas or Kerosene,  
with Gauge and Blow-off  
Cock, as represented..... \$21.00  
With Thermometer and Blow-  
off Cock..... 18.00

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MANUFACTURED BY

**Snowden & Cowman,**  
**BALTIMORE, MD**

9 West Fayette St.,

Trade Supplied. Circulars on Application.

# Caulk's \* Par-Excellence \* Alloy

(GOLD AND PLATINA).

CONTAINS FIVE OUNCES IN FILINGS.

Has Stood the Time-Test Over All Competitors.

An  
Alloy  
which  
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Unsurpassed for Density and Malleability. Edge-Strength  
Excellent. Good Color. Will not Shrink or Expand.

SEND FOR SAMPLE PACKAGE.

Price per ounce.....	\$3.00.	Two ounces for.....	\$5.00.
Five ounces for.....	11.00.	Ten ounces for.....	20.00.

Caulk's Filling Materials are sold by Troy Weight and sent by mail.

**L. D. CAULK, MANUFACTURER,**

1219 Arch Street, PHILADELPHIA, PA.

Laboratory: Camden, Delaware.

# A GUARANTEE.

THE Carborundum Wheels, Disks and Points now in use in nearly every dental office and Laboratory in the broad land, are *guaranteed* to cut four times as fast as corundum, to wear smooth, to cut equally well wet or dry, and to wear much longer than any other abrasive on the market —a broad claim, but our guarantee covers it—our reputation is back of it.

We have some new forms just introduced, points for use in porte polisher, put up in box containing a total of ten inches in assorted lengths; price, per box, 50 cents. Also, a Carborundum Hone for sharpening instruments, measures three inches in length by  $\frac{3}{4}$  inch wide by  $\frac{3}{8}$  inches deep, invaluable in office where time is an object. Price, 50 cents.

Send for new Illustrated Price List, just out, shows every form made up to date.

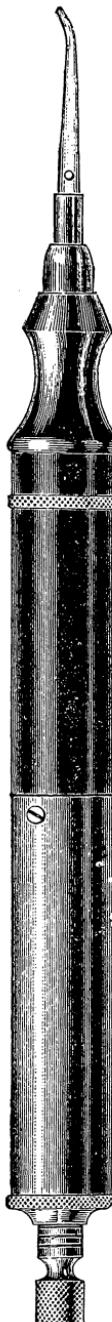
LEE S. SMITH & SON,  
SOLE AGENTS,

DENTAL DEPOT.

PITTSBURGH, PA.  
XXXIX

# SNOW'S SPRING MALLET.

PATENTED JUNE 8th, 1880.



## Reduction in Price!!

On and after September 1st, 1893, the price of this instrument will be reduced from seven dollars to **SIX DOLLARS.**

Its style and workmanship will remain the same as before, combining the following good points not found in other makes of spring mallets, viz.:

**The Hard Rubber Grip,**

**Three Grades of Blows,**

**A Perfect Fit for Either Snow & Lewis or  
Cone Socket Points.**

## SNOW'S GAS REGULATORS

Are the best and most satisfactory instruments of the kind yet produced. They were last illustrated in the ITEMS for May. They have features in their construction not embodied in the older patterns of Gas Regulators, which render them

**More Sensitive,**

**More Accurate,**

**And More Easy of Adjustment**

than any other.

### PRICES.

Index Regulator, with Timing Attachment..... \$10.00

New Model Regulator, with Timing Attachment 8.00

## SNOW'S VULCANIZERS.

**The New Model Whitney, [Pat. Dec. 22d, 1891,]**

**The Cross-bar, [Pat. June 13th, 1893,]**

**The New Model Buckeye, [Pat. Dec. 6th, 1892,]**

Are all good vulcanizers. The New Model Whitney has the advantage over the ordinary pattern of having a pot wrench which cannot slip. The Cross-bar has a better and more conveniently operated cover-fastening than the Whitney, and is to be preferred to it. The New Model Buckeye is the most easily managed, the strongest, and altogether the best vulcanizer on sale to-day. These vulcanizers are the only ones sold, accompanied with instructions and the right to use

## SNOW'S NEW PROCESS FOR VULCANIZING.

PATENTED JUNE 16TH, 1891.

By the use of this process, a denser plate, holding the pins more firmly, and a closer adaptation, both to the teeth and mouth are insured.

### PRICES.

Cross-bar or New Model Buckeye, No. 2..... \$16.00

New Model Whitney, No. 2..... 14.00

Send for circulars before purchasing.

**GEORGE B. SNOW, Buffalo, N. Y.**

# The Chase Metallic Combination Plate.

This New and Successful Style of making Combination Dental Plates is now offered to the Profession with the assurance that it combines the many qualities desirable in an Artificial Plate, *viz.*:

**Lightness, Strength, Conductivity,  
Durability, Simplicity  
and Ease of Construction,**



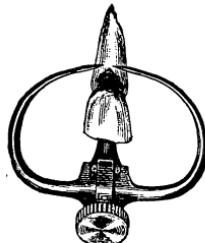
**With the Most Perfect  
Adaptation to the Mouth  
and Comfort of the Wearer.**

*The Chase Combination Plate should not be confounded with the old style combination plates of metal and rubber as described in text-books and used by older practitioners.*

We wish it fully understood that by this system combination plates are made nearly as quickly and easily as vulcanized plates, overcoming previous obstacles in sand molding, attaching metal to rubber, swaging, etc. Dentists having no previous experience or practice in metal work can successfully make these plates.

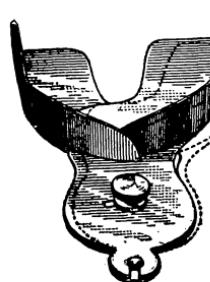
The cost of gold for these plates is from \$5 to \$7. Aluminum only a few cents. The necessary outfit, consisting of Sand, Metal for Dies, etc., costs from \$3 to \$5.

## The New Hatch CERVICAL RUBBER-DAM CLAMP. For Labial and Buccal Cavities.



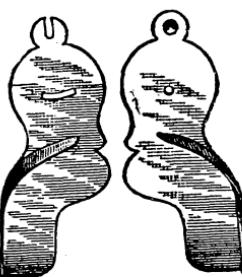
This clamp is designed for use in filling that class of very troublesome cases, where the cavity extends very high on the labial or buccal surface of the root. It is *Universal* as it is applicable to both sides of either maxillary.

It is fixed in position and retained by a thumb-screw, by which the pressure can be regulated at will. The bearing upon the gum being only by the small points, its application is made with the minimum of pain to the patient, and, except in extreme cases, is absolutely painless after it is in position. Price, \$3.00.



## The Combination IMPRESSION CUP.

This is adjustable and furnishes the foundation for making any cup desired. It is made in two pieces, working on a pivot, and by means of a set-screw, may be opened to any extent desired. It may also be separated so as to form partial right and left cups. Price, best German silver, \$1.00.



## THE C. C. DENTIMETER.

FOR THE ACCURATE MEASUREMENT OF TEETH OR ROOTS FOR CROWN- AND BRIDGE-WORK.  
PRICE, 50 CENTS.

## C. C. D. P. CO.'S PURE ROLLED ALUMINUM.

A CAREFULLY SELECTED ARTICLE FOR DENTAL PURPOSES.  
Price, per package, with full instructions for annealing, swaging and polishing, \$1.00.  
FOR SALE AT ALL DENTAL DEPOTS, OR BY

**The Chase Combination Dental Plate Company,**

**A. S. BILLINGS, Manager, Omaha, Neb.**

# SCHMERZLOS.

A non-secret preparation which will destroy all pain in the preparing of teeth for filling. A 2-oz. bottle for \$3.00. A trial will convince you.

P. V. GUERRY, D.D.S.,  
1802 Green Street, Philadelphia.

## Tonalgia Has Stood the Test!

So many now use it that it can safely be said to have been generally adopted by the profession.

Do we humbug you? A sample sent FREE upon application, enclosing twenty-five cents to cover cost of postage and mailing cases.

A \$3.00 HYPODERMIC SYRINGE GIVEN AWAY!  
WRITE FOR PARTICULARS.

### A Leading Chemist says:

As a Chemist of many years' experience, I can say that Tonalgia, when used according to directions, is absolutely non-injurious to soft tissue, or the organism in general.

S. S. WEST, President of Bruce and West M'f'g Co., Cleve'land, O.

WHITE HAVEN, PA., October 18th, 1893.

GENTLEMEN:—Please send at once \$20 worth of Tonalgia. The \$10 worth we had before is nearly gone, and we do not wish to be without it, for there is nothing better.

DRS. BRITTON & GARRISON.

PHILADELPHIA, PA., October 16th, 1893.

DEAR S'RS:—Inclosed find my check for \$10, for which send Tonalgia at once, as I am nearly out, and cannot be without it. The demand is continually growing with my patients, who almost without exception prefer it to gas.

W. T. WYCKOFF, D.D.S.

Write for endorsements. We can send you the name of some friend who is using it.

### TONALGIA WILL NOT DETERIORATE.

Single bottle, 2-ounce, - - - \$2.50 Five bottles, 10-ounce, - - - \$10.00  
EXPRESS PREPAID.

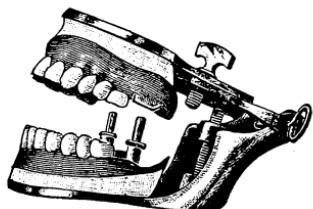
We will give you a \$3.00 syringe made expressly for dental use.

### ADDRESS:

ANTALGIA M'F'G CO., 11, 13, 15 Euclid Avenue, Cleveland, O.

## SPRINGS FOR DENTAL PLATES.

(Patented May 3d, 1892.)



several sets. Price, \$5.25 per set. To insure success get the first set made by some one who has had experience.

INSTRUCTIONS.—Take plaster impression, place models on articulator, select plain teeth, wax to base-plate and forward by express. Upper plate will be finished and returned with ideal base-plate fitted to lower model for second bite. Return plate and model for adjustment of springs and lower teeth. Price, for finished plates, including springs, \$12.50. For further information address,

J. J. STEDMAN, LaPorte, Ind.

# \* \* \* A BOND, \* \*

Certifying that the Arophene Manufacturing Company sends a challenge to any person inventing or offering for sale any local anæsthetic for the painless extraction of teeth, to meet and contest as to which is the best. Our company will deposit Two THOUSAND DOLLARS, to be used by a committee to advertise the contest and let the Dental profession know the result.

- 1st.—We claim Arophene is the best and most reliable Anæsthetic for the Painless Extraction of Teeth.
- 2d.—We can extract more teeth painless than is possible to do with any other Local Anæsthetic before the Dental Profession.
- 3d.—No injurious after effect to the gums or system follows.

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WE have established a new plan whereby *all practitioners of dentistry and medicine* can secure a lease for an OFFICE RIGHT and ten ounces of Arophene for \$10. This will entitle *all* to secure and use Arophene, where a lease has not been formally made by us, or our Agents.

AROPHENE is the STANDARD LOCAL ANÆSTHETIC being used by many of the most competent practitioners in the United States and nearly all foreign countries on the *Globe*, and will need no recommendation to those who have used it or know its great merits.

After we receive the first TEN-OUNCE ORDER, ACCOMPANIED with the cash, we will allow any who order it and accept this "Special Offer" to order thereafter, in smaller quantities, if desirable, at the regular retail price of \$2.50 per two ounce bottle, *prepaid by us*, to their address, any place in the United States.

We will further allow any practitioner who has not yet given it a trial to do so by sending us \$2.50, when we will prepay to their address by any express a regular two ounce bottle that they may use it before taking out a larger order and the lease.

We will protect all who have a lease made by us, and we will not fill any orders in any such territory. Remember, when you order ten ounces and accompany same with \$10, we will return a lease for an office right as well as sending Arophene by first express, over any express lines.

We have adopted this plan because many of our patrons have suggested it to us as a popular way by which to introduce Arophene in the practice of every Dentist in the Universe. Many object to paying from \$15 to \$25, or \$150 for a lease or right to use an anæsthetic, hence we feel sure that *all* will accept this offer and lose no time in securing the lease for using it in their office, *free of charge*, as well as a great reduction in the price of Arophene in ten ounce lots. We also handle the best and only Dental Syringe on the market, complete in every detail, with two extra fine reinserted needles in a neat morocco case post-paid for \$2.50. Extra needles at 25 cents each to our patrons.

We have NO AGENTS authorized to sell Arophene, and as this preparation is "Registered and Trade Marked" according to the Patent Law, we caution all not to use it or claim to use it without a right to do so from us.

We fill all orders DIRECT from our house and have it in the hands of NO DENTAL DEPOTS. It can be ordered and sent direct by us only. We can refer you to any of the Leading Banks or Express Offices in Cincinnati as well as 1,000 patrons in the United States and Foreign Countries. Send money by express order, registered mail, money order, draft, or certified check.

"AROPHENE" WILL NOT DETERIORATE.

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Address All Communications and Orders to

## The Arophene Manufacturing Co.,

29 W. FIFTH STREET, CINCINNATI, OHIO.

# University of Pennsylvania,

DEPARTMENT OF DENTISTRY,

THIRTY-SIXTH STREET AND WOODLAND AVENUE,  
PHILADELPHIA, PENNA.

Session Opens October 2, 1893, and continues 7 Months.

For Catalogues and other information, address

JAMES TRUMAN, D.D.S., Dean,  
3243 Chestnut Street, Philadelphia, Pa.

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# Louisville \* College \* of \* Dentistry,

DENTAL DEPARTMENT OF THE CENTRAL UNIVERSITY OF KENTUCKY.

Regular Winter and Spring School.

Session opens January 2d, 1894, and continues six months.

The new building will be completed before the opening of the coming session.

Three years' graded course. Abundant clinical material. Thorough diadic teaching. Favorable climate and season of the year.

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# University of the State of New York.

NEW YORK DENTAL SCHOOL

FOR MEN AND WOMEN.

Kennedy Building, N. E. cor. 4th Ave. and 22d St.,  
NEW YORK CITY.

**O**WING to the difficulty of obtaining first class instructors, and also of determining a wise selection for the school site, it was found impossible to begin work until October 2d, 1893, on which day our regular Fall and Winter Session began, and which will terminate March 21st, 1894. The preliminary and final examinations are conducted by the Regents of the University, and the professors of the dental branches will demonstrate at the chair what they previously teach from the platform. Anatomy, Chemistry and Physiology will be taught by recitations and lectures. Students will have to properly qualify in filling natural teeth out of the mouth before the Faculty will consider them proficient to treat a patient at the chair.

Address the Secretary,

J. HOWARD REED, D.D.S., M.D.S.,  
120 W. 87th St., New York City.

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# STEURER'S PLASTIC GOLD.

This is chemically pure gold in a plastic state, which can be manipulated as easily as amalgam.

It will not "ball," but spreads until condensed. Denser fillings can be made by hand pressure than by any other form of gold with the mallet. Holds its color perfectly, and can be used in combination fillings with amalgam.

Beware of all imitations which have sprung up within the past few years on account of its great success here and abroad.

Price, per bottle, 1-16 oz., \$2.50. Cash with all orders.

Dr. J. A. STEURER,

Or Sold at all Dental Depots. 78 West 47th St., New York City.

THE HASKELL POST-GRADUATE SCHOOL  
—OF—  
**PROSTHETIC DENTISTRY,**

211 WABASH AVENUE,

L. P. HASKELL, President.  
A. M. MARKLE, Secretary.

CHICAGO.

Now in its fifth year, has a large and well-equipped Laboratory, including Electric Motor for its Lathes, and is open continuously. Students may enter at any time.

Instruction given in all that pertains to Prosthetic Dentistry, including Metal Plates, selection and arrangement of teeth, Crown and Bridge Work, Continuous Gum Work, Porcelain Inlays, and the Pearly Brown Porcelain Crowns and Bridges.

One month of technical instruction under the personal supervision of PROF. HASKELL and assistants has been found sufficient time for these specialties.

**Tuition, Fifty Dollars.**

The LABORATORY is prepared to construct Dentures of all kinds. Send for price-list.

DENTAL DEPARTMENT  
OF THE  
**OHIO MEDICAL UNIVERSITY.**

SECOND ANNUAL SESSION BEGINS WEDNESDAY,  
SEPTEMBER 13th, 1893, AND CLOSES  
MARCH, 13th, 1894.

FEES.

Matriculation (but once).....	\$5.00
Course Ticket.....	50.00
Demonstrator of Anatomy (including material).....	10.00
Chemical Laboratory (\$5.00 returnable).....	10.00
Graduation Fee.....	25.00

For further information or catalogue, address,

A. O. ROSS, M.D., D.D.S., Dean, 807 North High St.; or,  
G. A. BILLOW, A.M., D.D.S., Secretary, Cor. Mt. Vernon Ave.  
and 17th St.,

COLUMBUS, OHIO.

# GOULD DENTAL CHAIR.



Fig. II—Normal.

We would merely call your attention to a few of its Advantages over all other Dental Chairs:—

- 1st. The Gould is the only first class low priced chair.
- 2nd. The Gould is the only low priced pedal lever chair.
- 3rd. The Gould has more and better movements than any high priced chair made.
- 4th. The Gould is the only chair that has the Horizontal Anesthetic Position.
- 5th. The Gould is the only chair that has the Chloroform Narcosis Position.
- 6th. The Gould is the only complete chair, requiring "no extras."
- 7th. The Gould obtains all the positions secured by other chairs and more.
- 8th. The Gould chair has the most satisfactory head rest made.
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Fig. XIV—Chloroform Narcosis.

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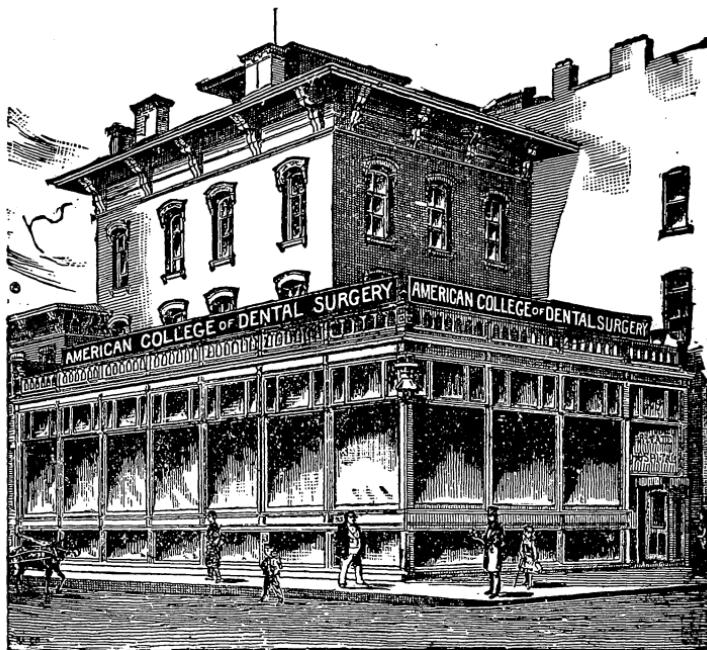
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VOL. XV.

DECEMBER, 1893.

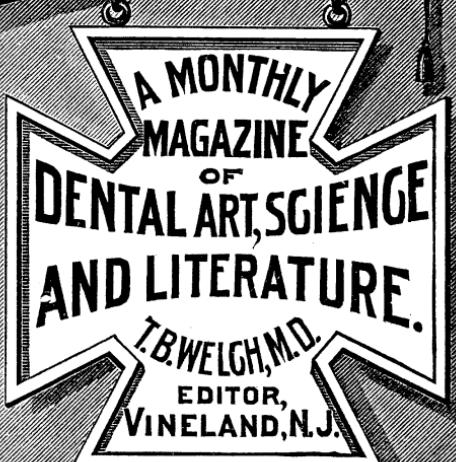
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